CRPL-F 114

FOR OFFICIAL USE

IONOSPHERIC DATA

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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
WASHINGTON, D. C.

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic. This practice represents a change from that listed in issues previous to CRPL-F78.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when foF2 is less than or equal to foF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number									
	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945
December		15	33	53	86	108	114	126	85	38
November		16	38	52	87	112	115	124	83	36
October		17	43	52	90	114	116	119	81	23
September		18	46	54	91	115	117	121	79	22
August		18	49	57	96	111	123	122	77	20
July		20	51	60	101	108	125	116	73	
June		21	52	63	103	108	129	112	67	
May		22	52	68	102	108	130	109	67	
April		24	52	74	101	109	133	107	62	
March		27	52	78	103	111	133	105	51	
February		29	51	82	103	113	133	90	46	
January	14	30	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 48 and figures 1 to 96 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Republica Argentina, Ministerio de Marina:
Buenos Aires, Argentina
Decepcion I.

University of Graz:
Graz, Austria

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Leopoldville, Belgian Congo

Defence Research Board, Canada:
- Baker Lake, Canada
- Churchill, Canada
- Ottawa, Canada
- Prince Rupert, Canada
- Resolute Bay, Canada
- St. John's, Newfoundland
- Winnipeg, Canada

Radio Wave Research Laboratories, National Taiwan University, Taipeh, Formosa, China:
- Formosa, China

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
- Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
- De Bilt, Holland

Icelandic Post and Telegraph Administration:
- Reykjavik, Iceland

Radio Research Laboratories, Tokyo, Japan:
- Akita, Japan
- Tokyo (Kokubunji), Japan
- Wakkanai, Japan
- Yamagawa, Japan

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
- Oslo, Norway
- Tromso, Norway

South African Council for Scientific and Industrial Research:
- Capetown, Union of South Africa
- Johannesburg, Union of South Africa

Research Laboratory of Electronics, Chalmers University of Technology, Gothenburg, Sweden:
- Kiruna, Sweden

Research Institute of National Defence, Stockholm, Sweden:
- Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:
- Lulea, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
- Schwarzenburg, Switzerland

United States Army Signal Corps:
- Okinawa I.
- White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
- Anchorage, Alaska
- Fairbanks, Alaska (Geophysical Institute of the University of Alaska)
- Guam I.
- Huancayo, Peru (Instituto Geofisico de Huancayo)
- Maui, Hawaii
- Narsarssauk, Greenland
- Panama Canal Zone
- Point Barrow, Alaska
- Puerto Rico, W. I.
- San Francisco, California (Stanford University)
- Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 49 through 60 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 61 presents ionosphere character figures for Washington, D. C., during January 1954, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

SUDDEN IONOSPHERE DISTURBANCES

Table 62 shows that no sudden ionosphere disturbances were observed at Ft. Belvoir, Virginia, during the month of January 1954. Table 63 lists the sudden ionosphere disturbances observed in Sweden for October 1953.

Tables 64a and 64b give for December 1953 the radio propagation quality figures for the North Atlantic area, CRPL advance and short-term forecasts, a summary geomagnetic activity index and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, separately for each 6-hour interval of the Greenwich day, viz., 00-06, 06-12, 12-18, 18-24 hours UT (Universal Time or GCT).
(b) whole-day radio quality indices (beginning October 1952). Each index is a weighted average of the four quarter-day Q-figures, before rounding off, with half weight given to quality grades 5 and 6. This procedure tends to give whole-day indices suitable for comparison with whole-day advance forecasts which designate whenever possible the days when significant disturbance or unusually quiet conditions will occur.
(c) short-term forecasts, issued by CRPL every six hours (nominally one hour before 00^h, 06^h, 12^h, 18^h UT) and applicable to the period 1 to 13 (especially 1 to 7) hours ahead. Note that new scoring rules have been adopted beginning with October 1952 data.
(d) advance forecasts, issued semiweekly (CRPL-J reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole-day quality indices.
(e) half-day averages of the geomagnetic K indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey.
(f) illustration of the comparison of short-term forecasts with Q-figures and also with estimates of radio quality based on CRPL observations only.
(g) illustration of the outcome of advance forecasts (1 to 3 or 4 days ahead) and, for comparison, the outcome of a type of "blind" forecast. For the latter the frequency for each quality grade, as determined from the distribution of quality grades in the four most recent months of the current season, is partitioned among the grades observed in the current month in proportion to the frequencies observed in the current month.

The radio propagation quality figures are prepared from radio traffic data reported to CRPL by American Telephone and Telegraph Company, Mackay Radio and Telegraph Company, RCA Communications, Inc., Marconi Company, British Admiralty Signal and Radar Establishment, and the following agencies of the U. S. Government:--Coast Guard, Navy, Army Signal Corps, and State Department. The method of calculation, summarized below, is similar to that described in a 1946 report, IRPL-R31, now out of print. Beginning with recalculated figures for January 1952, only reports of radio transmission on North Atlantic paths closely approximating New York-London are included in the estimation of quality. Observations of selected ionospheric characteristics, even though strongly correlated with radio transmission quality, and traffic reports for paths such as New York-Stockholm or New York-Tangier, previously included in the quality-figure determination with low weight, have been left out of the present calculations inasmuch as a sufficient number of homogeneous reports are now available.

The original reports are submitted on various scales and for various time intervals. The observations for each 6-hour interval are averaged on the quality scale of the original reports. These 6-hour indices are then adjusted to the 1 to 9 quality-figure scale by a conversion table prepared by comparing the distribution of these indices for at least four months, usually a year,

with a master distribution determined from analysis of the reports originally made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. The 6-hourly quality figures are (subjectively) weighted means of the reports received for that period. These 6-hourly quality figures replace, beginning January 1953, the half-daily quality figures which formerly appeared in this table.

These quality figures are, in effect, a consensus of reported radio propagation conditions in the North Atlantic area. The reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported, frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality because of multipath, interference, etc. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

Note. The North Pacific quality figures, which were published through October 1951, have been temporarily discontinued. Since the establishment of the North Pacific Radio Warning Service at Anchorage, Alaska, a larger number of reports are being received than were previously available in Washington. The preparation of the quality figures will be resumed when sufficient data have been accumulated for determination of conversion tables for these new reports.

OBSERVATIONS OF THE SOLAR CORONA

Tables 65 through 67 give the observations of the solar corona during January 1954, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 68 through 70 list the coronal observations obtained at Sacramento Peak, New Mexico, during January 1954, derived by Harvard College Observatory as a part of its performance of a research contract with the Upper Air Research Observatory, Geophysical Research Directorate, Air Force Cambridge Research Center. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 65 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 66 gives similarly the intensities of the first red (6374A) coronal line; and table 67, the intensities of the second red (6702A) coronal line; all observed at Climax in January 1954.

Table 68 gives the intensities of the green (5303A) coronal line; table 69, the intensities of the first red (6374A) coronal line; and table 70, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in January 1954.

The following symbols are used in tables 65 through 70: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

Attention is called to the publication of "Particulars of Observations" at Climax, Colorado, and Sacramento Peak, New Mexico, for July through December 1953 in tables 71 and 72 of CRPL-F113. Mention of these tables was inadvertently omitted in last month's issue.

RELATIVE SUNSPOT NUMBERS

Table 71 lists the daily provisional Zürich relative sunspot number, R_Z, for January 1954, as communicated by the Swiss Federal Observatory. Table 72 contains the daily American relative sunspot number, $R_{A'}$, for December 1953, as compiled by the Solar Division, American Association of Variable Star Observers.

OBSERVATIONS OF SOLAR FLARES

Table 73 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

Reporting directly to the CRPL are the following observatories: Mt. Wilson, McMath-Hulbert, U. S. Naval, Wendelstein, Kanzel and High Altitude at Sacramento Peak, New Mexico. The remainder report to Meudon (Paris) and the data are taken from the Paris-URSIgram broadcast, monitored fairly regularly by the CRPL. The data on solar flares reported from Sacramento Peak, New Mexico, communicated by the High Altitude Observatory at Boulder, Colorado, are provided by Harvard University as the result of work undertaken on an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories.

The table lists for each flare the reporting observatory, date, times of beginning and ending of observation, duration (when known), total area (corrected for foreshortening), and heliographic coordinates. For the maximum phase of the flare is given the time, intensity, area relative to the total area, and the importance. The column "SID observed" is to indicate when a sudden ionosphere disturbance, noted elsewhere in these reports, occurred at the time of a flare. Times are in Universal Time (GCT).

INDICES OF GEOMAGNETIC ACTIVITY

Table 74 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary international character-figures, C; (2) geomagnetic planetary three-hour-range indices, Kp; (3) magnetically selected quiet and disturbed days.

The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity. The details of the currently used method follow. For each day of a month, its geomagnetic activity is assigned by weighting equally the following three criteria: (1) the sum of the eight Kp's; (2) the greatest Kp; and (3) the sum of the squares of the eight Kp's.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Kp is available from 1937 to date as noted in F108.

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

ERRATUM

The De Bilt, Holland, height values published in the F series, numbers 104 through 113, for January 1953 through October 1953, should be increased by 5 percent.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) — January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	(2.4)						(3.1)
01	(260)	(2.3)						(3.1)
02	260	2.8						(3.1)
03	250	(2.8)						(3.1)
04	250	2.9						3.2
05	250	3.1						3.2
06	240	(3.0)					2.1	(3.3)
07	230	2.9						3.4
08	220	4.3	210	—	—	1.7		3.6
09	230	4.8	220	—	110	2.2	2.4	3.6
10	250	5.3	210	3.6	110	2.5		3.5
11	250	5.7	210	3.7	110	2.7		3.5
12	250	5.9	210	3.8	110	2.8		3.5
13	260	5.8	210	3.8	110	2.8		3.5
14	260	5.6	210	3.6	110	2.6		3.5
15	250	5.6	210	—	110	2.4		3.5
16	230	5.5	220	—	120	2.0	1.9	3.6
17	220	4.8						3.5
18	220	3.8						3.4
19	230	3.2						3.3
20	230	2.7						3.4
21	(250)	2.1						3.2
22	(270)	2.2						3.1
23	(270)	(2.3)						3.1

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Tromso, Norway (69.7°N, 19.0°E) — December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	—	—					4.7	—
01	—	—					4.6	—
02	(320)	(2.4)					3.8	(3.0)
03	290	2.1					3.4	3.0
04	300	1.8					3.0	3.0
05	290	1.7					3.1	3.0
06	(280)	1.6					2.9	3.0
07	(275)	<1.6					3.0	(3.2)
08	—	<1.6					3.0	(3.2)
09	250	1.8			—	—	2.8	3.1
10	225	2.7			140	1.2	2.6	3.4
11	220	3.3			120	1.3	2.7	3.5
12	220	3.4			125	1.2	2.8	3.4
13	220	3.3			—	—	2.9	3.4
14	220	2.8			—	—	2.9	3.4
15	240	2.1			—	—	2.9	3.2
16	245	1.7					2.7	3.2
17	(280)	(1.6)					3.0	3.1
18	—	—					3.3	—
19	—	—					3.9	—
20	—	—					4.4	—
21	—	—					4.6	—
22	—	—					4.4	—
23	—	—					4.3	—

Time: 15.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W) — December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(2.6)					4.3	(3.0)
01	330	(2.2)					4.4	(3.0)
02	330	(2.2)					5.7	(2.9)
03	360	(2.1)					4.5	(2.8)
04	335	(2.2)					5.0	(2.9)
05	320	(2.4)					4.8	(2.8)
06	320	(2.0)					4.1	(2.8)
07	300	(2.0)					4.2	(3.0)
08	320	(1.9)					4.3	(2.9)
09	250	2.6					3.2	3.2
10	230	3.6					3.0	3.4
11	220	4.1					1.9	3.4
12	220	4.2					2.4	3.4
13	220	4.5					3.9	3.5
14	210	4.1					2.7	3.5
15	210	3.6					2.6	3.4
16	220	2.7					3.1	3.4
17	250	2.0					3.6	3.3
18	300	(1.6)					4.4	(3.1)
19	340	(1.8)					5.0	(2.6)
20	—	—					4.4	—
21	310	—					4.7	—
22	270	(2.8)					3.4	(3.2)
23	280	2.6					4.0	3.1

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 4

Anchorage, Alaska (61.2°N, 149.9°W) — December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	(1.5)					2.9	(3.1)
01	300	(1.4)					2.6	(3.0)
02	330	(1.6)					3.2	(2.8)
03	320	1.6					2.9	2.8
04	320	(2.0)					2.9	(3.0)
06	340	(1.6)					3.0	(2.9)
06	320	(1.8)					2.7	(2.9)
07	300	(1.7)					2.4	(3.0)
08	300	1.8						3.0
09	230	3.2	—	—	—	—	1.6	3.4
10	220	4.2	—	—	120	1.7		3.6
11	220	4.6	220	—	110	1.8		3.5
12	220	4.7	210	2.2	110	1.8		3.5
13	220	5.1	220	—	120	1.7		3.6
14	210	4.8	—	—	120	1.6		3.6
15	210	4.0						3.6
16	220	3.2						3.4
17	230	2.2						3.3
18	260	1.7						3.3
19	(280)	(1.6)					3.2	(3.2)
20	—	—					(2.7)	—
21	—	—					2.9	—
22	—	—					3.6	—
23	—	—					2.7	—

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 5

Narsarssuak, Greenland (61.2°N, 45.4°W) — December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	—	—					5.0	—
01	—	—					4.9	—
02	—	—					6.0	—
03	—	—					6.0	—
04	—	—					5.1	—
05	(300)	(2.4)					6.0	(3.2)
06	(280)	(1.8)					4.4	(3.1)
07	(270)	(1.6)					4.4	(3.5)
08	250	(1.8)					2.4	3.3
09	220	3.0	—	—	110	—	2.0	3.6
10	230	3.8	220	—	140	—		3.6
11	230	4.3	210	—	130	1.7		3.6
12	230	4.7	220	—	140	1.8		3.6
13	230	4.7	220	—	130	1.6		3.6
14	230	4.7	—	—	—	—		3.6
16	230	(3.9)	—	—	—	—	2.0	(3.2)
16	240	(3.2)					3.6	(3.2)
17	280	(2.8)					3.7	(3.1)
18	(290)	(2.2)					4.2	(3.0)
19	—	—					4.8	—
20	—	—					6.8	—
21	—	—					6.1	—
22	—	—					6.6	—
23	—	—					6.2	—

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 6

Oslo, Norway (60.0°N, 11.1°E) — December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	—	1.6						(3.1)
01	275	1.4						3.0
02	260	1.4						3.1
03	260	1.4					2.2	3.0
04	(255)	1.3					1.2	3.0
05	(260)	1.2						3.1
06	—	1.3						—
07	—	1.4						—
08	—	1.8						3.0
09	230	3.3					3.0	3.4
10	215	4.2					3.0	3.6
11	210	4.5	210	—	—	1.8	3.0	3.6
12	210	5.0	220	—	—	—	3.0	3.6
13	210	5.1	215	—	—	—	3.1	3.6
14	210	4.8	—	—	—	—	3.1	3.6
15	210	4.3					3.0	3.6
16	215	3.6						3.4
17	230	2.8						3.4
18	—	2.0						3.3
19	—	1.7						(3.1)
20	—	1.6						(3.0)
21	—	1.5						—
22	—	1.7						(3.1)
23	—	1.6						(3.0)

Time: 15.0°E.
Sweep: 0.6 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 7

Upsala, Sweden (59.8°N, 17.6°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	1.8					2.3	2.9
01	305	1.8					2.3	2.9
02	290	1.7					2.5	2.9
03	(320)	1.6					2.6	2.9
04	325	1.4					3.0	(2.8)
05	---	1.4					2.9	---
06	---	1.4					3.2	---
07	---	1.4					2.6	---
08	255	2.2			---	E	2.8	3.0
09	220	3.9	---	---	---	E	3.1	3.5
10	220	4.5	220	2.4	120	1.6	3.5	3.6
11	220	5.0	215	2.4	115	1.8	2.6	3.6
12	215	5.1	220	2.5	115	1.9	2.6	3.6
13	215	5.0	<215	2.4	115	(1.8)	2.4	3.6
14	215	4.7	210	---	---	1.6	2.4	3.6
15	210	3.9			---	E	2.5	3.5
16	220	3.0					2.3	3.3
17	230	2.3					2.3	3.2
18	(260)	1.8					2.4	3.1
19	(280)	1.6					2.4	(3.0)
20	(300)	1.6					2.0	(2.9)
21	(280)	1.6					2.2	(3.0)
22	(295)	1.7					2.3	2.9
23	(300)	1.7					2.3	(3.0)

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 8

Graz, Austria (47.1°N, 15.5°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.0						
01	270	3.0						
02	280	2.9						
03	280	2.9						
04	270	2.7						
05	240	2.3						
06	240	2.3						
07	250	2.4						
08	200	4.3						
09	200	5.1						
10	200	6.0						
11	200	6.0						
12	200	5.0						
13	200	6.2						
14	200	5.1						
15	200	5.0						
16	200	4.3						
17	220	3.4						
18	260	2.8						
19	260	3.0						
20	240	2.9						
21	260	2.9						
22	280	3.0						
23	290	2.9						

Time: 16.0°E.
Sweep: 2.6 Mc to 12.0 Mc in 2 minutes.

Table 9

San Francisco, California (37.4°N, 122.2°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(250)	(2.9)					2.4	(3.2)
01	(240)	(2.9)					2.3	(3.3)
02	(230)	3.0					2.2	3.3
03	(240)	3.0						3.4
04	(230)	2.9					2.2	3.4
05	(240)	2.9						3.3
06	(250)	(2.9)					2.3	3.3
07	230	3.0					2.5	3.5
08	220	4.8	220	---	(120)	(1.8)	3.1	3.6
09	230	5.2	220	---	(120)	(2.3)	3.3	3.6
10	240	5.6	220	---	110	(2.6)	3.4	3.5
11	250	6.3	220	---	110	(2.8)	3.8	3.5
12	250	6.5	210	---	(120)	(2.9)	3.7	3.6
13	240	6.0	220	---	110	(2.9)	3.7	3.5
14	240	5.7	230	---	110	(2.7)	3.8	3.5
15	230	5.5	220	---	120	(2.4)	3.6	3.6
16	220	5.0	---	---	---	---	3.6	3.6
17	210	4.2					3.3	3.6
18	(230)	2.9					3.6	3.3
19	(220)	2.6					2.8	3.5
20	(230)	2.6					3.6	3.5
21	(230)	2.6					2.8	3.3
22	(250)	2.6					3.0	3.2
23	(250)	2.9					2.6	3.2

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16 seconds.

Table 10

White Sands, New Mexico (32.3°N, 106.5°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2						3.1
01	250	3.4						3.2
02	240	3.4						3.2
03	240	3.3						3.3
04	230	3.4						3.3
05	250	3.0						3.2
06	260	2.9						3.2
07	230	3.9						3.4
08	230	5.0	220	---	110	2.0	2.9	3.6
09	250	5.3	220	3.6	110	2.4	3.3	3.5
10	260	5.8	220	3.9	110	2.7	3.6	3.4
11	260	6.0	210	4.0	110	2.8	3.6	3.4
12	260	6.8	200	4.0	110	2.9	3.8	3.4
13	260	6.6	210	4.0	110	2.9	4.0	3.4
14	250	6.2	220	3.8	110	2.7	3.9	3.5
16	240	5.9	220	---	110	2.5	4.0	3.6
16	220	5.4			110	2.0	4.2	3.6
17	210	4.5					3.4	3.5
18	220	3.1					3.3	3.4
19	230	2.8					3.6	3.3
20	240	2.8					3.2	3.4
21	250	2.9					3.3	3.3
22	260	2.8					2.4	3.1
23	270	3.1						3.1

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 11

Okinawa I. (26.3°N, 127.8°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(2.8)						(3.0)
01	300	2.8						(3.1)
02	270	3.0						3.2
03	250	2.8						3.3
04	240	2.8						3.6
05	250	2.7						---
06	240	(3.3)						---
07	220	4.4	---	---				3.6
08	240	5.2	220	---	120	---	3.0	3.6
09	250	6.0	220	3.8	110	---	3.2	3.6
10	250	6.4	220	4.0	110	2.8	3.5	3.5
11	260	6.7	200	4.2	110	3.0	3.8	3.4
12	260	8.0	200	4.2	110	3.0	4.2	3.4
13	260	8.8	(200)	4.1	110	3.0	4.3	3.4
14	250	8.2	220	4.0	110	2.9	4.5	3.5
15	240	7.1	220	---	---	---	4.0	3.6
16	230	6.6			---	---	4.0	3.6
17	210	5.4					3.4	3.7
18	220	4.0					3.1	3.5
19	240	3.6						3.3
20	250	3.5						3.3
21	250	3.4						3.4
22	240	3.2						(3.4)
23	(260)	(2.8)						(3.3)

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 12

Maui, Hawaii (20.8°N, 156.5°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(2.5)					2.1	(3.0)
01	300	2.7					2.4	3.0
02	260	2.6					1.7	3.3
03	250	2.6						3.4
04	240	(2.5)					1.6	(3.4)
06	260	(2.0)					2.0	(3.3)
06	300	(2.0)					2.1	(2.9)
07	250	3.7					2.7	3.3
08	250	5.3	240	---	120	2.2	3.0	3.4
09	290	6.5	250	4.0	120	2.6	3.7	3.3
10	280	7.2	230	4.2	120	2.9	5.1	3.4
11	290	7.5	220	4.3	120	3.1	4.8	3.3
12	300	7.8	220	4.3	120	3.1	4.7	3.0
13	300	9.1	200	4.3	120	3.1	4.9	3.1
14	270	9.6	220	4.2	120	3.0	6.6	3.2
16	260	8.5	240	4.0	120	2.8	5.4	3.4
16	240	7.3	240	3.7	120	2.5	3.7	3.6
17	230	5.6	---	---	130	1.9	4.4	3.6
18	220	4.6					4.5	3.6
19	220	3.1					4.1	3.5
20	270	2.7					4.0	3.1
21	280	2.9					3.4	3.2
22	250	2.8					3.5	3.3
23	280	(2.8)					2.7	3.2

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 13

Puerto Rico, W.I. (18.5°N, 67.2°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.0						3.1
01	250	4.3					2.3	(3.1)
02	240	(4.5)					2.7	(3.3)
03	210	(4.5)					3.0	(3.5)
04	210	3.5					2.5	3.5
05	240	3.0					2.7	3.1
06	240	3.0					2.5	3.2
07	220	4.1						3.5
08	240	4.9	230	—	110	2.0	2.8	3.5
09	250	5.7	230	—	110	2.5	2.9	3.5
10	260	6.3	220	4.1	110	2.8	3.0	3.5
11	260	6.2	210	4.2	110	3.0	3.2	3.5
12	260	6.0	210	4.2	110	3.1		3.5
13	280	6.0	200	4.2	110	3.1	3.4	3.3
14	270	6.5	210	4.1	110	3.0	3.9	3.4
15	250	6.5	220	3.9	110	2.8	3.6	3.5
16	240	5.6	220	—	110	2.5	3.6	3.6
17	230	5.3	220	—	110	2.0	3.6	3.6
18	210	4.9					3.0	3.6
19	220	3.9					2.9	3.5
20	240	3.4					2.8	3.2
21	240	3.6						3.1
22	250	3.8					2.5	3.1
23	260	4.0					2.5	3.2

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 14

Guam I. (13.6°N, 144.9°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	3.0						3.3
01	250	2.9						3.3
02	260	2.8						3.3
03	240	2.7						3.6
04	240	1.9						3.6
05	240	1.8						3.4
06	240	1.4					1.6	(3.3)
07	240	4.4	230	---	120	1.4		3.6
08	260	6.2	220	—	110	2.2	2.8	3.4
09	280	7.6	210	3.9	100	2.7	3.8	3.2
10	300	8.0	200	4.1	100	2.9	3.4	2.9
11	320	7.7	190	4.2	100	3.1	3.8	2.7
12	330	7.7	200	4.2	100	3.1	4.4	2.7
13	340	7.6	200	4.2	100	3.1	4.8	2.7
14	320	8.0	200	4.1	100	3.0	4.0	2.8
15	300	8.1	210	—	100	2.9	4.4	3.0
16	270	8.4	220	—	110	2.5	3.8	3.2
17	240	8.1	230	---	120	2.1	3.4	3.4
18	220	7.8					3.0	3.5
19	210	6.6					2.9	3.6
20	210	5.4					2.6	3.5
21	220	4.9					3.7	3.3
22	230	3.9						3.4
23	240	3.5						3.4

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 15

Panama Canal Zone (9.4°N, 79.9°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	(3.0)					2.0	(3.3)
01	230	(3.0)					2.2	(3.3)
02	220	(2.8)					2.4	(3.3)
03	220	(2.4)					2.4	(3.4)
04	260	(2.2)					2.6	(3.1)
05	260	(2.4)					4.2	(3.1)
06	260	2.6					3.1	3.1
07	240	4.6	—	—	120	1.8	4.1	3.5
08	280	5.7	240	3.8	120	2.4	4.0	3.4
09	280	6.8	230	4.1	110	2.8	4.2	3.3
10	270	7.4	210	4.2	110	3.1	4.3	3.4
11	280	7.6	210	4.3	100	3.2	4.3	3.3
12	290	7.6	210	4.3	110	3.3	4.8	3.3
13	290	7.2	220	4.3	100	3.3	5.0	3.2
14	290	7.6	220	4.2	110	3.2	5.6	3.2
15	280	7.3	220	4.2	110	3.0	5.1	3.3
16	250	6.8	220	3.9	110	2.7	4.4	3.6
17	230	5.7	230	---	120	2.2	4.2	3.6
18	220	4.4					4.0	3.6
19	230	3.3					4.2	3.4
20	240	3.0					3.7	3.4
21	260	2.9					3.2	3.2
22	260	2.9					2.6	3.1
23	250	(3.0)					2.3	3.2

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 16

Huancayo, Peru (12.0°S, 75.3°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(3.3)					3.5	(3.0)
01	340	(1.4)						—
02	340	<1.0					4.0	—
03	400	<1.0					3.7	—
04	360	<1.0					4.1	—
05	360	<1.0					6.2	—
06	240	4.5			120	1.7	4.6	3.3
07	(280)	6.4	230	—	110	2.6	7.6	3.2
08	320	7.3	210	4.1	100	2.8	10.5	3.0
09	340	7.4	200	4.2	100	---	11.5	2.7
10	370	7.6	200	4.3	100	—	12.2	2.6
11	380	7.2	200	4.4	100	---	11.7	2.6
12	380	7.3	200	4.4	100	---	12.0	2.6
13	370	7.4	190	4.3	100	—	11.5	2.6
14	360	7.6	200	4.3	100	3.2	10.3	2.7
15	330	8.1	200	4.1	100	3.0	9.3	2.8
16	300	8.5	200	—	110	2.8	6.5	3.0
17	(280)	8.3	230	—	110	2.3	4.6	3.1
18	250	7.9			120	1.7		3.1
19	250	7.2						3.3
20	250	6.0						3.3
21	260	5.2						3.2
22	280	4.0						3.2
23	300	3.6						2.9

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 17

Point Barrow, Alaska (71.3°N, 156.8°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(2.4)					6.8	
01		(2.6)					6.5	
02		(2.5)					6.0	
03		2.7					5.0	
04		2.8					4.1	
05		(2.6)					4.2	
06		(3.0)					4.5	
07		3.3					4.4	
08		(2.8)					4.7	
09		3.0					4.5	
10		3.7					4.2	
11		4.1					3.8	
12		4.0					3.0	
13		4.4					2.5	
14		4.2					2.8	
16		4.0					3.3	
16		3.4					1.9	
17		2.8					3.2	
18		2.2					2.8	
19		1.9					4.0	
20		(2.0)					4.0	
21		(2.4)					4.4	
22		(2.7)					4.6	
23		(2.4)					6.9	

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 18

Kiruna, Sweden (67.8°N, 20.5°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	340	3.5					4.2	3.1
01	(350)	3.4					4.1	3.0
02	340	3.3					2.2	3.0
03	330	2.2					2.7	3.0
04	310	2.2					1.6	(3.2)
05	(300)	(2.1)					1.6	(3.2)
06	(295)	(2.2)					2.0	(3.4)
07	275	2.8						3.2
08	235	3.2						3.4
09	235	4.0	—	—	—	—		3.5
10	230	4.2	—	—	—	—		3.5
11	230	4.3			—	—		3.7
12	225	4.7			—	—		3.6
13	225	4.4			—	—		3.5
14	225	4.4			—	—		3.5
15	250	3.7						3.4
16	240	3.3						3.4
17	(250)	(3.5)					3.1	(3.4)
18	(270)	(3.1)					2.2	(3.2)
19	—	—					4.4	—
20	—	—					4.1	—
21	(340)	(3.3)					4.0	(3.2)
22	(355)	(2.8)					4.1	(3.1)
23	330	3.2					4.1	3.1

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 19

Lulea, Sweden (65.6°N, 22.1°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	(2.0)					3.0	
01								
02	330	(1.9)					2.6	
03								
04	(300)	---					3.2	
05								
06	(290)	---					3.0	
07								
08	250	2.6			---	---	2.2	
09								
10	240	4.0	225	---	---	1.9	3.2	
11								
12	225	4.7	215	---	130	2.0	2.8	
13								
14	225	4.0			---	1.6	3.3	
15								
16	245	2.8					2.6	
17								
18	(245)	---					3.2	
19								
20	(310)	---					2.7	
21								
22	(300)	---					3.4	
23								

Time: 15.0°E.
Sweep: 1.5 Mc to 10.0 Mc in 6 minutes, automatic operation.

Table 20

Fairbanks, Alaska (64.9°N, 147.8°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(1.9)					5.0	(3.2)
01		---					5.2	---
02		(2.5)					5.8	(3.1)
03		(1.8)					5.4	(3.0)
04		---					5.0	---
05		(2.6)					4.5	(3.2)
06		(2.4)					5.0	(3.0)
07		2.4					4.4	(3.2)
08		3.0					4.0	(3.5)
09		3.6		---		1.5	3.1	(3.6)
10		4.4		---		1.7	2.2	(3.6)
11		5.0		---		1.9	2.3	(3.8)
12		4.8		---		1.8	2.2	(3.8)
13		5.0		---		1.8	2.4	(3.8)
14		4.8		---		1.5	1.9	(3.8)
15		4.0					1.9	(3.7)
16		3.5					1.8	(3.5)
17		3.0					4.0	(3.6)
18		2.0					4.6	(3.5)
19		1.8					4.4	(3.3)
20		(1.8)					4.4	(3.2)
21		(2.2)					4.5	(3.3)
22		(2.2)					4.0	(3.3)
23		(2.2)					4.8	(3.3)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 21

Reykjavik, Iceland (64.1°N, 21.8°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.4	---
01	(370)	(2.6)					4.7	(2.8)
02	(350)	(2.9)					4.2	(3.0)
03	(320)	(2.4)					3.6	(2.9)
04	(320)	2.5					3.9	2.9
05	(300)	2.2					2.1	(3.2)
06	(330)	(1.9)					1.9	(3.2)
07	---	(1.6)					(2.0)	---
08	280	2.6						3.2
09	250	3.6						3.3
10	240	4.3	---	---	---	---		3.4
11	250	4.7	240	---	---	---		3.4
12	250	4.7	240	---	---	---		3.4
13	250	4.4	250	---	---	---		3.4
14	260	4.2	---	---	---	---		3.3
15	250	4.1	---	---	---	---		3.2
16	250	(3.8)						(3.1)
17	260	(4.0)					2.5	(3.2)
18	270	(3.2)					2.2	(3.2)
19	(280)	(2.6)					4.2	(3.2)
20	(320)	(2.3)					4.0	---
21	---	---					4.0	---
22	---	---					4.1	---
23	---	---					4.2	---

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 22

De Bilt, Holland (52.1°N, 5.2°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.8						3.0
01	255	(2.9)						3.0
02	250	(2.8)						3.1
03	<250	(2.6)						3.1
04	230	(2.0)						3.1
05	230	(2.0)						3.3
06	(220)	(2.1)						3.3
07	<220	3.0			---	E		3.5
08	210	4.4	210	2.4	---	1.9		3.6
09	230	4.8	200	3.2	110	2.2	2.4	3.6
10	230	5.2	200	3.3	105	2.4	2.5	3.6
11	230	5.8	200	3.4	100	2.4	2.4	3.6
12	230	5.6	210	3.5	105	2.5	1.9	3.6
13	230	5.3	205	3.3	100	2.4		3.6
14	230	5.2	215	2.8	110	2.2		3.6
15	220	4.9	210	2.3	140	1.9	1.8	3.6
16	210	4.4						3.6
17	210	3.5						3.4
18	220	2.8						3.3
19	220	2.5						3.3
20	(230)	2.4						3.2
21	<240	2.5						3.0
22	<260	2.6						3.0
23	260	2.6						3.0

Time: 0.0°.
Sweep: 1.4 Mc to 11.2 Mc in 6 minutes, automatic operation.

Table 23

Lindau/Harz, Germany (51.6°N, 10.1°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.8					2.1	3.1
01	260	2.8					2.0	3.1
02	260	2.9					2.2	3.1
03	260	2.8					2.2	3.2
04	250	2.4					2.2	3.2
05	240	2.2					1.9	3.3
06	240	2.0	---					3.4
07	230	2.2	---				2.2	3.5
08	215	3.8	---		---	E	2.4	3.7
09	220	4.8	210		115	1.8	3.0	3.7
10	220	5.0	210		---	2.2	3.1	3.7
11	230	5.5	205		105	2.3	3.5	3.6
12	235	5.6	210		105	2.4	3.4	3.6
13	230	5.6	200		110	2.4	3.5	3.6
14	225	5.4	210		110	2.2	3.3	3.6
15	225	5.4	220		120	2.0	3.3	3.6
16	220	4.8	---		---	E	3.0	3.6
17	215	4.2	---				2.6	3.5
18	225	3.4	---				2.4	3.4
19	240	2.8					2.3	3.4
20	250	2.6					2.2	3.4
21	275	2.4					2.2	3.2
22	280	2.4					2.1	3.1
23	275	2.7					2.2	3.3

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 24

Schwarzenburg, Switzerland (46.8°N, 7.3°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.0						3.3
01	250	3.0						3.3
02	250	3.0						3.4
03	250	3.0						3.4
04	220	3.0						3.5
05	210	2.4						3.6
06	200	2.5						3.8
07	200	2.8						3.8
08	200	4.0				---		4.0
09	200	4.8				2.2		4.0
10	200	5.2				2.4		4.0
11	200	5.6				2.6		4.0
12	200	5.8				2.6		4.0
13	200	5.8				2.5		4.0
14	200	5.4				2.4		3.9
15	200	5.5				2.2		4.0
16	200	5.5				2.2		4.0
17	200	4.5				---		4.0
18	200	3.6						3.8
19	210	3.0						3.6
20	210	2.8						3.6
21	210	2.7						3.6
22	250	2.8						3.4
23	270	2.8						3.4

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 25

Formosa, China (25.0°N, 121.5°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.4						2.8
01	240	3.7						3.1
02	240	3.6					1.8	3.2
03	230	3.5					2.0	3.4
04	230	2.8					1.9	3.2
05	260	2.3					2.1	3.0
06	280	2.8					2.0	2.9
07	240	5.6			130	1.9	2.2	3.5
08	240	6.6	240	(3.8)	120	2.4	3.2	3.4
09	270	7.4	240	4.0	120	2.8	3.6	3.6
10	280	8.5	220	4.3	120	3.0	4.1	3.2
11	280	9.2	220	4.3	120	3.2	4.6	3.6
12	280	10.3	220	4.4	120	3.2	4.8	3.2
13	280	11.9	240	4.3	—	—	4.6	3.3
14	260	11.9	230	(4.1)	—	—	4.4	3.6
15	240	10.2	220	4.0	—	—	4.4	3.6
16	230	8.0	—	—	—	—	3.9	3.5
17	220	6.7			—	—	3.7	3.6
18	210	5.7					3.0	3.5
19	230	4.6					2.6	3.3
20	240	4.7					2.4	3.1
21	240	4.0					2.0	3.4
22	240	3.4					1.7	3.1
23	280	3.3						3.0

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 26

Leopoldville, Belgian Congo (4.3°S, 15.3°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M2000)F2
00	245	6.0						2.3
01	240	5.8						2.3
02	220	4.5						2.5
03	230	3.4						2.5
04	240	2.8					1.8	2.6
05	240	4.6	—	—	125	1.7		2.7
06	270	5.6	230	—	115	2.4	2.9	2.5
07	305	6.2	220	4.2	110	2.7	3.3	2.3
08	345	7.0	220	4.3	110	3.1	3.2	2.0
09	385	8.2	210	4.4	110	3.3	3.8	2.0
10	370	9.4	210	4.4	110	3.3	3.4	2.0
11	380	10.4	210	4.4	110	3.4	3.5	2.0
12	370	11.0	215	4.4	110	3.4	3.9	2.1
13	350	11.4	220	4.3	110	3.2	4.0	2.1
14	350	11.4	220	4.2	110	3.0	3.9	2.1
15	325	11.8	230	4.0	115	2.6	3.6	2.2
16	280	11.6	240	—	120	2.0	3.0	2.2
17	250	11.0					2.6	2.3
18	250	10.1					2.6	2.2
19	265	9.5					2.0	2.2
20	260	9.4					2.0	2.3
21	240	9.6						2.5
22	225	9.4						2.6
23	220	6.9						2.4

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 27

Buenos Aires, Argentina (34.5°S, 58.5°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.2					2.8	2.9
01	290	5.0					3.0	2.9
02	280	5.0					2.6	3.0
03	260	5.0					2.0	3.0
04	250	4.7						3.1
05	240	4.6	—	—	130	1.8	2.1	3.4
06	240	5.2	220	—	110	2.3	3.6	3.4
07	280	5.8	220	—	110	2.7	3.7	3.3
08	300	5.9	210	—	100	3.0	4.0	3.0
09	340	6.4	210	4.5	100	(3.2)	4.2	2.9
10	400	7.0	200	4.5	—	—	4.5	2.7
11	390	8.4	200	4.5	100	3.3	5.2	2.7
12	350	9.8	200	4.5	—	—	5.0	2.9
13	310	10.5	200	4.4	—	—	4.4	3.0
14	290	11.0	200	4.4	—	—	4.4	3.1
15	280	11.0	200	4.2	100	3.0	4.4	3.3
16	260	10.2	220	—	—	—	3.9	3.3
17	260	10.0	220	—	—	—	3.8	3.4
18	240	8.6	230	—			2.9	3.4
19	240	7.6						3.2
20	260	6.3						3.0
21	290	5.8						2.9
22	300	5.8						2.9
23	300	5.7						2.9

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 28

Deception I. (63.0°S, 60.7°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	5.8						(3.2)
01	280	5.4						(3.2)
02	280	5.2						(3.1)
03	280	5.5						(3.1)
04	260	5.5						(3.2)
05	250	5.8					2.0	(3.2)
06	250	5.4					3.3	(3.2)
07	260	5.4					3.9	(3.3)
08	250	5.6					4.0	(3.3)
09								
10	250	5.6					4.6	(3.3)
11	240	5.7					4.9	(3.3)
12	240	5.6					4.5	(3.4)
13	240	5.8					4.7	(3.4)
14	230	5.4					3.8	(3.4)
15	230	5.3					4.0	(3.4)
16	240	5.3					4.0	(3.4)
17	250	5.4					3.5	(3.3)
18	250	5.6					3.3	(3.3)
19	250	5.8					3.0	(3.2)
20	250	6.0					2.0	(3.3)
21	260	6.0						(3.3)
22	260	6.0						(3.3)
23	260	5.9						(3.2)

Time: 60.0°W.
Sweep: 1.5 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 29

Resolute Bay, Canada (74.7°N, 94.9°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.8					4.0	3.1
01	260	2.7					3.5	3.0
02	270	2.5					3.6	3.0
03	270	2.4					3.6	(3.1)
04	280	2.5					3.9	3.0
05	280	2.1					3.5	3.0
06	260	2.7			—	—	3.8	3.0
07	270	3.0			—	1.3	3.7	3.1
08	260	3.5	—	—	120	1.4	3.2	3.1
09	260	3.7	—	—	110	1.7	3.3	3.1
10	260	4.0	250	2.8	110	1.8	2.3	3.1
11	260	4.0	250	3.0	110	1.9		3.1
12	280	4.0	240	3.0	110	1.9	2.6	3.1
13	270	4.0	240	3.0	110	1.9	2.2	3.1
14	270	4.1	240	—	100	1.8	2.1	3.1
15	260	3.9	250	—	100	1.7	2.9	3.2
16	260	4.0			110	1.4	2.8	3.1
17	260	4.0			—	—		3.0
18	250	3.5					1.8	3.0
19	250	3.3					3.5	3.0
20	260	3.2					2.8	3.0
21	260	3.0					2.8	3.1
22	260	3.0						3.0
23	250	2.9					2.5	3.1

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 30

Point Barrow, Alaska (71.3°N, 156.8°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.8					6.8	(3.3)
01	(300)	(2.4)					7.6	(3.0)
02	290	(2.6)					5.3	3.0
03	270	(2.6)					>5.4	(3.0)
04	280	2.9					4.4	(2.9)
05	(280)	(3.0)					3.8	(3.0)
06	(270)	(3.2)					4.6	(3.1)
07	<320	(3.0)					4.6	(3.2)
08	300	3.4	—	—	—	—	4.6	3.2
09	290	3.6	240	—	—	—	4.4	3.2
10	280	4.0	240	—	100	—	3.6	3.3
11	270	4.1	230	—	100	—	2.6	3.3
12	260	4.4	230	—	100	—	2.6	3.3
13	260	4.6	230	—	100	1.9	2.0	3.3
14	260	4.6	220	—	—	—		3.4
15	250	4.4	220	—	110	1.6		3.4
16	250	4.3	—	—	—	—	2.4	3.4
17	240	3.8			—	—	1.9	3.3
18	250	3.3					3.4	3.4
19	280	3.0					3.6	3.2
20	300	2.4					3.8	3.1
21	320	2.4					4.6	3.0
22	(300)	(2.7)					4.4	(3.2)
23	(290)	(2.7)					5.9	(3.1)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 31

Baker Lake, Canada (64.3°N, 96.0°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.0			—	E	6.0	2.9
01	290	1.8			—	E	6.0	2.9
02	300	2.0			—	E	8.0	3.0
03	300	1.9			—	E	5.0	(2.9)
04	290	2.1			—	E	4.5	(2.9)
05	300	2.4	—	—	—	—	5.0	(3.0)
06	270	2.7	—	—	—	—	4.3	(2.9)
07	280	3.0	—	—	120	1.9	4.0	2.9
08	280	3.8	—	—	120	2.7	2.5	3.0
09	280	3.7	—	—	120	2.7	3.0	3.0
10	300	4.0	270	3.4	120	2.8	3.0	3.0
11	340	4.2	260	3.5	120	2.8		2.9
12	320	4.4	260	3.5	120	2.6		3.0
13	320	4.7	260	3.5	120	2.7		2.8
14	300	4.9	250	3.3	120	2.5		3.0
15	300	4.5	260	3.2	120	2.4		2.9
16	280	4.0	280	—	130	2.3		3.0
17	290	4.0	—	—	130	2.3	4.2	2.9
18	280	3.4			130	2.3	6.0	2.9
19	290	3.2			—	2.0	6.0	2.8
20	290	3.0			—	—	4.7	2.9
21	270	3.0			—	—	7.5	3.0
22	270	2.8			—	—	7.2	2.9
23	280	2.5			—	E	7.0	3.0

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 32

Reykjavik, Iceland (64.1°N, 21.8°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		—					4.4	
01		(2.2)					4.0	
02		(2.0)					4.8	
03		(2.3)					4.0	
04		(2.3)					4.4	
05		(2.0)					2.2	
06		2.2				—		
07		2.9				—		
08		3.6				1.6		
09		4.0		—		1.7		
10		4.5		—		2.0		
11		4.7		—		2.2		
12		4.9		—		2.2		
13		5.0		—		2.3		
14		5.0		—		2.2		
15		4.8		—		2.0		
16		4.5				—	1.8	
17		(4.2)					3.0	
18		(3.8)					3.5	
19		(3.3)					3.9	
20		—					3.9	
21		(3.2)					4.0	
22		—					4.2	
23		—					4.8	

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 33

Churchill, Canada (58.8°N, 94.2°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.8			—	—	8.0	(2.8)
01	300	2.8			130	3.2	8.0	(2.8)
02	290	2.8			—	(1.8)	6.0	—
03	300	2.8			110	(2.3)	6.0	(2.8)
04	300	3.0			120	2.8	4.5	—
05	320	3.2			110	3.0	4.0	(2.8)
06	340	3.2			120	3.3	4.8	(2.9)
07	300	3.6			110	2.8	4.8	3.0
08	300	4.0	230	—	110	2.8	5.0	3.0
09	290	4.3	240	3.7	110	2.9	5.0	3.0
10	320	4.5	220	3.8	110	2.6	5.0	3.0
11	300	4.8	220	3.8	110	2.7		2.9
12	310	5.0	240	3.8	110	2.8		2.9
13	310	5.0	240	3.8	110	2.7		3.0
14	300	5.0	240	3.8	110	2.6		3.0
15	300	5.0	240	3.5	110	2.5		3.0
16	270	4.8	240	—	110	2.3		3.0
17	270	4.6			110	2.0		3.0
18	270	3.8			120	2.2		3.0
19	300	3.4			120	2.7	2.8	2.9
20	330	3.0			120	2.8	4.4	2.9
21	320	3.0			120	2.6	6.0	(2.9)
22	300	2.8			130	2.2	8.0	(2.9)
23	300	2.7			—	(2.6)	9.0	(2.8)

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 34

Prince Rupert, Canada (54.3°N, 130.3°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	1.8					2.4	
01	300	1.7					2.7	
02	300	1.8					3.5	
03	(300)	1.5					4.2	—
04	310	1.9			—	—	4.0	—
05	320	1.9			—	—	4.0	—
06	300	2.0			—	—	4.0	—
07	260	3.0			—	—	3.6	(3.1)
08	240	3.8	220	—	120	2.0	3.0	3.3
09	260	4.2	220	3.3	110	2.2	2.3	3.3
10	300	4.6	210	3.6	110	2.6	2.6	3.3
11	300	5.0	200	3.8	110	2.7		3.2
12	300	5.2	210	3.8	110	2.7		3.3
13	290	5.2	220	3.8	110	2.8		3.3
14	290	5.1	220	3.7	110	2.7		3.3
15	260	5.0	230	—	110	2.6		3.3
16	240	5.0	240	—	110	2.3		3.3
17	240	4.8	—	—	110	2.0	1.6	3.3
18	230	4.2			—	—		3.2
19	230	3.4			—	—	1.6	(3.1)
20	260	2.5						—
21	260	2.0						—
22	280	2.0					2.1	—
23	300	1.8					3.0	

Time: 120.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 35

De Bilt, Holland (52.1°N, 5.2°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.9						3.1
01	270	3.0						3.1
02	265	3.0					1.5	3.1
03	260	2.9						3.1
04	240	2.3					2.1	3.2
05	<240	2.2						3.3
06	210	2.9			—	E		3.4
07	210	4.3	205	—	—	1.8		3.6
08	215	4.9	200	3.2	100	2.3	2.3	3.6
09	230	5.5	200	3.6	100	2.5	2.9	3.8
10	225	5.8	200	3.9	100	2.6	3.1	3.8
11	230	6.2	200	3.9	100	2.7	3.1	3.8
12	230	6.0	200	3.9	100	2.6	3.1	3.6
13	230	6.1	200	3.7	105	2.6	2.7	3.8
14	220	6.1	205	3.6	105	2.5	2.6	3.6
15	215	5.8	210	3.0	105	2.2	2.2	3.6
16	210	5.6	—	—	—	1.8	2.3	3.6
17	205	5.3			—	E	2.1	3.5
18	210	5.0					2.2	3.4
19	210	3.9						3.5
20	210	3.5						3.4
21	230	2.9						3.2
22	230	2.7						3.2
23	260	2.8						3.1

Time: 0.0°.
Sweep: 1.4 Mc to 11.2 Mc in 6 minutes, automatic operation.

Table 36

Winnipeg, Canada (49.9°N, 97.4°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	370	2.0						—
01	400	(2.2)						—
02	380	(2.2)					2.8	—
03	370	(2.6)					3.0	—
04	(350)	(2.2)					2.8	—
05	(340)	(2.6)					2.8	—
06	340	(2.5)					3.8	—
07	250	3.2			—	—		3.3
08	250	4.0	230	—	120	2.1	3.1	3.3
09	290	4.3	220	3.6	120	2.4		3.3
10	310	4.9	210	3.9	120	2.6		3.2
11	320	5.1	200	3.9	110	2.8		3.1
12	310	5.2	200	3.9	110	2.8		3.2
13	300	5.2	210	3.9	110	2.8		3.2
14	300	5.3	230	3.8	110	2.7		3.2
15	280	5.2	230	3.7	110	2.6		3.2
16	260	5.2	230	—	110	2.2		3.3
17	240	4.9	240	—	130	2.0		3.3
18	230	4.5						3.3
19	240	3.8						3.2
20	250	2.9						3.1
21	280	2.5						3.1
22	300	2.1						(3.1)
23	300	2.0						(3.0)

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 37

St. John's, Newfoundland (47.6°N, 52.7°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.0					3.0	3.0
01	320	2.0					3.5	3.0
02	310	2.0					3.0	3.0
03	300	1.8					3.1	3.0
04	290	1.8					2.8	3.1
05	300	1.8			---	E	3.0	3.0
06	250	3.3	230	---	130	1.7		3.5
07	240	4.3	240	---	120	2.2		3.6
08	260	5.0	230	3.4	120	2.5		3.6
09	280	5.2	210	3.7	120	2.7		3.5
10	280	5.6	200	3.9	110	2.9		3.5
11	290	5.8	200	4.0	110	2.9		3.5
12	280	6.0	210	4.0	110	2.9		3.5
13	280	5.8	220	3.8	110	2.8		3.5
14	280	5.6	240	3.8	120	2.6		3.5
15	260	5.7	240	3.3	120	2.4		3.5
16	240	5.7	240	---	130	2.0		3.5
17	230	5.2	---	---	---	E	2.0	3.5
18	230	4.6			---	E		3.4
19	240	3.9						3.3
20	250	3.2						3.0
21	280	2.7						2.9
22	300	2.4					1.9	3.0
23	310	2.1					2.9	2.9

Time: 60.0°W.
Sweep: 0.8 Mc to 10.0 Mc in 18 seconds.

Table 38

Ottawa, Canada (45.4°N, 75.9°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	2.0						3.0
01	330	1.9						(2.9)
02	340	1.6					3.1	(2.8)
03	330	1.8					2.3	(2.9)
04	380	1.8					2.6	---
05	(320)	(1.8)					3.3	---
06	280	2.4						3.1
07	240	4.0	240	---	120	2.0		3.3
08	260	4.8	220	3.6	120	2.3		3.4
09	280	5.3	220	3.9	120	2.6		3.3
10	280	5.4	210	3.9	120	2.8		3.3
11	290	5.8	210	4.0	120	2.9		3.2
12	280	5.8	220	4.0	110	2.9		3.3
13	290	5.8	220	4.0	120	2.9		3.3
14	290	5.8	230	3.9	120	2.8		3.3
15	280	5.9	230	3.8	120	2.6		3.3
16	270	5.8	240	---	120	2.2		3.3
17	240	5.3	---	---	140	1.9		3.3
18	240	4.6						3.2
19	250	3.8						3.2
20	260	3.0						3.1
21	280	2.8						3.0
22	290	2.4						3.0
23	310	2.0						3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 39

Wakkanai, Japan (45.4°N, 141.7°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.8					2.8	3.0
01	280	3.8					3.0	3.0
02	270	3.8					3.0	3.0
03	260	3.7					2.6	3.0
04	250	3.7					2.6	3.1
05	240	3.6					2.4	3.3
06	230	4.2			---	---	2.5	3.4
07	230	5.3	---	---	120	2.0	3.2	3.5
08	240	6.1	230	3.7	110	2.4	3.3	3.4
09	250	6.6	220	4.0	110	2.7	4.4	3.4
10	250	6.8	220	4.1	110	2.8	4.4	3.4
11	250	7.0	220	4.2	110	2.9	4.3	3.3
12	250	7.2	220	4.1	110	2.8	4.2	3.4
13	250	6.6	230	4.0	110	2.7	3.6	3.4
14	250	6.3	230	3.8	110	2.5	3.5	3.4
15	240	6.3	240	3.6	110	2.3	3.6	3.4
16	230	6.1	---	---	120	1.8	3.3	3.4
17	230	5.7					3.0	3.4
18	230	4.5					3.5	3.2
19	250	4.6					3.3	3.2
20	260	4.1					3.0	3.1
21	270	3.9					3.0	3.0
22	270	3.9					2.8	3.0
23	280	4.2					2.8	3.1

Time: 135.0°E.
Sweep: 1.0 Mc to 15.5 Mc in 2 minutes.

Table 40

Akita, Japan (39.7°N, 140.1°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.5					3.2	2.8
01	290	3.5					2.6	2.9
02	390	3.5					2.8	2.9
03	250	3.5					2.9	3.0
04	240	3.4					2.8	3.1
05	250	3.1					2.4	3.0
06	230	4.5			---	1.8	2.4	3.4
07	230	5.5	220	3.5	120	2.2	3.0	3.5
08	240	6.5	230	3.8	110	2.5	4.0	3.6
09	250	6.6	220	4.0	110	2.7	4.2	3.5
10	260	6.8	210	4.2	110	2.8	4.4	3.4
11	260	7.3	210	4.3	110	3.0	4.5	3.4
12	250	7.6	220	4.2	100	3.0	4.2	3.4
13	250	6.9	220	4.1	110	2.9	4.4	3.4
14	260	6.6	230	4.0	110	2.8	3.8	3.3
15	250	6.6	240	3.5	110	2.5	3.6	3.4
16	240	6.6	250	3.4	120	2.1	3.7	3.5
17	220	5.8					3.5	3.5
18	240	4.1					3.5	3.2
19	250	4.2					3.5	3.1
20	250	4.0					3.8	3.0
21	270	3.6					3.7	2.9
22	270	3.6					3.7	2.9
23	290	3.5					3.5	2.9

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 41

Tokyo, Japan (35.7°N, 139.5°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.5					2.6	3.0
01	270	3.6					2.8	3.0
02	270	3.4					2.8	3.0
03	250	3.5					2.5	3.1
04	230	3.2					2.6	3.3
05	250	3.1					2.5	3.1
06	220	4.4			150	1.7	2.5	3.4
07	220	6.0	220	---	120	2.2	3.0	3.5
08	230	6.9	220	4.0	110	2.6	4.0	3.5
09	240	7.0	220	4.0	110	2.8	4.0	3.5
10	260	7.0	210	4.3	110	3.0	4.5	3.3
11	260	7.7	200	4.3	110	3.0	4.5	3.4
12	250	8.4	210	4.3	110	3.0	4.0	3.4
13	250	7.3	230	4.2	110	3.0	3.9	3.4
14	260	7.1	230	4.0	110	2.9	3.9	3.3
15	250	7.1	240	3.7	110	2.6	3.9	3.4
16	230	6.8	230	---	120	2.2	4.0	3.5
17	220	6.2			---	---	3.9	3.5
18	220	4.5					3.5	3.4
19	230	4.3					3.0	3.3
20	260	3.8					3.0	3.1
21	260	3.5					3.0	3.1
22	270	3.3					3.0	3.0
23	280	3.5					3.0	3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 42

Yamagawa, Japan (31.2°N, 130.6°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.3					2.6	2.9
01	300	3.3					2.2	2.9
02	300	3.2					2.3	2.9
03	280	3.2					2.2	3.0
04	250	3.3					2.3	3.2
05	260	2.7					2.2	3.1
06	270	3.0			---	---	2.1	3.0
07	240	5.6	---	---	130	1.9	3.2	3.5
08	240	6.6	230	---	120	2.4	3.4	3.5
09	250	7.2	230	4.0	110	2.6	4.3	3.4
10	260	7.4	230	4.2	110	2.9	4.4	3.3
11	280	7.8	220	4.4	110	3.0	4.2	3.2
12	290	8.7	220	4.4	110	3.0	4.2	3.3
13	270	9.1	230	4.4	110	3.0	4.2	3.3
14	280	8.6	240	4.2	110	3.0	3.5	3.3
15	260	8.4	240	4.0	110	2.8	3.8	3.4
16	250	7.6	240	3.8	110	2.4	3.3	3.4
17	250	6.9	---	---	120	2.0	3.4	3.5
18	240	5.7			---	---	3.7	3.5
19	230	4.4					3.3	3.5
20	260	3.5					3.2	3.0
21	280	3.4					3.0	3.0
22	270	3.4					2.7	3.0
23	300	3.3					2.9	2.9

Time: 135.0°E.
Sweep: 0.8 Mc to 20.0 Mc in 15 minutes, manual operation.

Table 43

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.4					2.3	3.0
01	270	3.4					2.1	3.0
02	250	3.4					1.8	3.1
03	250	3.1						3.0
04	260	2.9						3.0
05	260	2.8					1.9	3.0
06	230	4.6	---	---	---	1.8		3.4
07	250	5.6	220	3.6	110	2.4		3.3
08	280	6.1	220	4.1	110	(2.8)		3.3
09	290	6.6	210	4.3	110	3.0		3.2
10	290	6.9	200	4.4	110	3.2		3.2
11	310	7.1	200	4.5	110	3.4		3.1
12	310	7.7	200	4.5	110	3.4		3.0
13	300	8.0	210	4.5	110	3.4		3.0
14	300	8.0	210	4.4	110	3.3	3.8	3.0
15	290	8.0	210	4.2	110	3.1	4.0	3.1
16	280	7.9	220	4.0	110	2.8	3.8	3.1
17	260	8.0	230	3.4	120	2.3	3.2	3.2
18	240	8.0	---	---	---	---	2.7	3.3
19	220	6.8					2.2	3.3
20	230	5.5						3.3
21	240	4.2					1.7	3.2
22	260	3.7					2.2	3.0
23	260	3.6					1.6	3.0

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 44

Capetown, Union of S. Africa (34.2°S, 18.3°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2						3.0
01	270	3.2						3.0
02	270	3.2						3.0
03	260	3.1						3.0
04	260	3.1						3.0
05	260	3.1						3.0
06	250	3.6	---	---	---	---		3.2
07	240	5.1	240	3.3	120	2.0		3.4
08	260	5.7	230	3.8	120	2.5		3.3
09	280	6.1	230	4.1	120	2.9		3.2
10	300	6.4	210	4.3	110	3.1	3.3	3.2
11	320	7.0	210	4.4	110	3.2		3.0
12	320	7.4	200	4.5	110	3.3	3.3	3.0
13	320	8.1	200	4.5	110	3.3	3.5	3.0
14	300	8.1	220	4.4	110	3.2	3.3	3.0
15	300	8.2	220	4.3	110	3.1		3.1
16	280	8.0	220	4.1	110	2.9	3.2	3.1
17	270	7.4	230	3.8	120	2.6	3.2	3.2
18	250	7.1	240	3.1	120	2.0	2.7	3.3
19	230	7.1	---	---	---	---	1.6	3.3
20	220	5.6						3.2
21	230	4.4						3.2
22	250	3.7						3.1
23	250	3.4						3.1

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 45

Point Barrow, Alaska (71.3°N, 156.8°W) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.0					6.6	3.1
01	270	3.0					6.2	3.1
02	250	(3.0)					5.8	3.2
03	280	2.9					4.9	3.2
04	310	3.0					4.0	3.2
05	300	3.0					4.0	3.0
06	330	3.2	---	---	---	---	3.9	3.1
07	320	<3.3	240	---	---	---	4.7	(3.2)
08	(360)	3.8	250	---	---	---	4.0	(3.0)
09	(340)	3.9	220	3.4	100	2.2	4.2	(3.0)
10	440	3.8	220	3.5	100	2.3	4.1	2.8
11	410	4.0	220	3.5	100	2.3	2.5	2.7
12	420	4.0	220	3.5	100	2.4	2.4	2.7
13	380	4.0	230	3.6	100	2.5		2.8
14	360	4.0	230	3.6	100	2.4		3.0
15	320	4.0	230	3.5	100	2.3		3.1
16	320	4.2	240	3.4	100	2.2	2.2	3.1
17	280	4.0	240	3.1	---	1.8	2.1	3.2
18	250	3.8	220	---	110	1.5	2.6	3.3
19	250	3.3	---	---	---	---	3.3	3.3
20	270	3.0	---	---	---	---	4.2	3.2
21	320	3.0					4.7	(3.1)
22	(340)	(2.9)					5.8	---
23	300	2.9					5.4	3.1

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 46

Reykjavik, Iceland (64.1°N, 21.8°W) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		---					4.9	
01		---					5.0	
02		---					5.0	
03		---					4.2	
04		(2.0)					4.6	
05		(2.2)		---			3.6	
06		(3.0)		---				
07		(3.5)		---		---		
08		3.7		3.3		---		
09		4.0		---		---		
10		4.2		3.6		---		
11		4.4		3.7		2.8		
12		4.6		3.8		---		
13		4.6		3.8		---		
14		4.3		3.7		---		
15		4.4		3.6		---		
16		4.4		3.5		2.3		
17		(4.0)		3.3		---	2.4	
18		3.8				---	3.6	
19		(3.8)					3.8	
20		(3.6)					3.9	
21		(3.3)					3.9	
22		---					5.1	
23		---					4.4	

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 47

Point Barrow, Alaska (71.3°N, 156.8°W) August 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.0					6.8	3.2
01	280	3.2					5.0	3.3
02	290	3.2	---	---			5.8	3.2
03	270	3.3	---	---	---	---	4.9	3.2
04	300	3.3	220	---	---	---	4.9	3.2
05	310	3.5	220	---	---	---	4.6	3.1
08	420	3.6	230	3.2	100	---	4.6	2.8
07	390	3.8	230	3.5	---	---	4.6	2.9
08	430	4.0	220	3.6	100	(2.2)	4.6	2.8
09	400	4.0	210	3.6	100	2.4	4.8	2.8
10	500	4.0	200	3.7	100	2.5	4.0	2.5
11	470	4.1	220	3.8	100	2.5	3.1	2.7
12	430	4.2	210	3.8	100	2.7		2.8
13	440	4.0	220	3.8	100	2.7		2.8
14	440	4.1	220	3.8	100	2.5		2.7
15	430	4.1	220	3.7	100	2.5		2.8
16	410	4.2	220	3.6	100	2.4		2.9
17	370	4.1	230	3.5	110	2.2		3.0
18	330	4.0	230	3.4	110	2.0	2.9	3.2
19	310	3.9	240	3.3	100	1.7	3.9	3.2
20	280	3.6	240	---	---	---	3.9	3.3
21	300	3.4	---	---	---	---	4.4	3.2
22	300	3.3					4.9	3.2
23	320	3.1					6.2	3.1

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 48

Reykjavik, Iceland (64.1°N, 21.8°W) August 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		3.2					4.3	
01		---					4.9	
02		---					4.3	
03		---		---		---	5.0	
04		(2.7)		---		---	4.4	
05		3.2		---		---	2.6	
06		3.6		3.2		---		
07		3.8		3.4		---	2.5	
08		4.1		3.6		2.4	2.4	
09		4.3		3.7		2.5		
10		4.2		3.8		2.6		
11		4.4		3.9		2.8		
12		4.4		3.9		---		
13		4.4		3.9		2.8		
14		4.4		3.8		2.7		
15		4.4		3.8		2.7		
16		4.3		3.8		2.8		
17		4.4		3.7		(2.4)	2.1	
18		4.3		3.5		2.3	3.8	
19		4.0		---		---	2.7	
20		4.0		---		---	4.2	
21		(3.7)		---			4.0	
22		---					4.2	
23		(3.2)					4.4	

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

TABLE 49

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h' F2 (Characteristic), Km (Unit), January (Month), 19 54

Observed at Washington, D.C.

Lat 38.7° N, Long 77.1° W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC. E.J.W., J.W.P.

Calculated by: McC. E.J.W., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	S	S	(290)S	(250)S	240	220	230	220	210	(240)L	240	240	250	(240)A	240	230	240	(220)A	220	230	(260)S	(230)S	(240)S
2	(240)S	(260)S	270	(270)S	250	260	250	220	240	(250)L	230	260	260	250	240	240	240	220	220	(230)S	230	250	(270)S	(270)S
3	270	(250)S	250	250	240	220	220	240	220	230	240	240	230	240	240	240	220	220	(230)A	220	(210)S	(280)S	(300)S	<330S
4	(310)S	(260)S	(240)S	240	240	230	220	(250)A	220	230	240H	240H	250	250	260	250	230	230	220	220	220	250	(270)S	(240)S
5	250	(250)S	290F	290F	250	260F	250	240	220	(230)L	270	260	260	260	270	240	230	250	220	210	230	230	250	250
6	250	(270)S	(240)S	(280)S	270	250	230	(240)S	230	250	280	260	250	250	250	230	220	220	(240)S	230	(240)S	[260]S	(270)S	(270)S
7	(250)S	(280)S	270	270	(240)S	250	230	220	220	(250)L	(250)L	250	250	290	270	230	210	210	(230)S	(270)S	S	S	(300)S	270
8	250	(250)S	(270)S	270	(260)A	(280)S	240	220	(220)A	240	240	250	290	270	260	250	220	220	220	230	(250)S	<380S	<330S	(300)S
9	(290)S	(300)S	270	250	(250)S	(230)S	220	(230)S	(210)A	220	230H	290	250	250	240	250	220	220	(240)S	(260)S	(250)S	<300S	S	S
10	<320S	<310S	(270)S	250	(240)S	230	220	230	220	230	(260)S	270	250	260	270	250	230	210	(230)S	(220)S	(240)S	S	<300S	(260)S
11	(270)S	(260)S	(260)S	250	230	(260)S	250	230	220	230	270	260	260	270	250	230	230	210	(230)S	(230)S	<300S	S	S	S
12	S	(280)S	260	(260)S	240	230	230	[230]C	230	230	240	270	240	270	260	240	230	220	210	220	(280)S	<310S	(280)S	(290)S
13	(280)S	250	(250)S	(260)S	250	(260)S	(250)S	(240)S	240	210	260	250	[260]C	260	260	250	240	230	220	(240)S	250	(260)S	(270)S	(260)S
14	(270)S	(280)S	(280)S	250	250	240	240	(240)S	220	230	250	230	240	250	240	250	230	220	(240)S	220	220	(280)S	(260)S	280
15	(270)S	(240)S	230	250	(260)S	250	(250)S	230	220	240	270	260	260	280	260	240	(230)S	220	(240)A	250	220	(230)S	(260)S	240
16	(270)S	(340)S	C	C	C	C	230	230	230	240	240	250	240	260	260	270	240	220	(230)A	210	220	(270)S	S	S
17	S	(260)S	(240)S	230	220	220	(240)S	250	220	220	(240)H	240	240	240	280	280	230	220	210	(260)S	240	(250)S	(270)S	(260)S
18	(260)S	240	240	260	260	(250)S	240	210	210	220	240	250	240	250	270	270	230	230	250	220	230	(250)S	(240)S	250
19	240	(250)S	230	250	(230)A	(240)S	(300)S	250	230	220	200	240	270	270	(270)L	280	260	220	210	230	(250)S	270	(270)S	(300)S
20	(300)S	(240)S	(260)S	(270)S	(270)A	(240)S	280	240	230	220	260	250	270	280	270	250	240	220	230	(220)S	(240)S	(280)S	(260)S	(300)S
21	(260)S	(270)S	250	220	230	(270)S	[260]S	(240)S	230	230	250	260	250	240	250	250	230	220	220	250	(240)S	(280)S	(300)S	(280)S
22	(280)S	(260)S	250	240	240	(270)S	[260]A	(250)S	(240)A	220	250	240	270	260	270	250	230	220	(210)S	(270)S	(230)S	S	S	S
23	S	(270)S	250	250	(250)S	(250)S	(290)S	250	220	230	260	250	260	260	270	250	230	220	220	(240)S	240	(250)S	S	S
24	S	S	(270)S	(280)S	260	(260)S	230	220	210	250	230	260	250	230	250	250	240	210	210	(270)S	(260)S	(280)S	S	S
25	S	(300)S	(270)S	250	250	(230)S	(240)S	230	210	220	250	270	250	250	260	250	230	210	230	240	230	(230)S	(300)S	(290)S
26	(290)S	(270)S	(280)S	(260)S	(250)S	(250)S	(250)S	230	230	240H	270H	260	250	260	240	250	230	220	220	240	230	240	250	(280)S
27	270	260	240	250	250	250	240	220	220	230	250	270	270	270	250	250	220	220	210	230	220	(250)S	(280)S	(250)S
28	(290)S	(320)F	(280)S	(290)S	(250)S	230	230	220	210	230	230	240	260	250	250	240	230	210	210	250	250	220	(250)S	(260)S
29	(300)A	(290)S	280	250	250	250	230	220	220	240	250	250	250	260	260	260	230	210	220	240	(230)S	S	S	S
30	S	S	<300E	(270)S	240	220	(240)S	230	220	230	[240]L	260	260	260H	240H	250	250	220	230	230	230	(240)S	(250)S	(280)S
31	(280)S	(260)S	(260)S	250	(260)S	230	230H	(260)S	220	250	270	(280)L	270H	260	270	270	240	210	220	230	(260)S	(280)S	S	S
Median	270	(260)	260	250	250	250	240	230	220	230	250	250	250	260	260	250	230	220	220	230	230	(250)	(270)	(270)
Count	23	27	28	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	23	21	22

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1946 — 702519

TABLE 50

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), January (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D. C.

Lat. 38.7°N, Long. 77.1° W

75° W Mean Time

Scaled by: Mc. E.J.W., J.W.P.

Calculated by: Mc. E.J.W., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(1.7)JA	[1.8]A	(1.9)PF	(2.4)JF	(2.6)PF	(3.7)JF	(3.7)PS	(3.3)FS	4.8	4.7F	(5.4)PF	6.6	6.0F	5.4F	5.4	5.0	4.6F	(4.8)JS	(5.1)FS	4.2	32F	3.1FS	(2.4)PF	(2.9)JS
2	(2.7)PF	(3.1)PF	3.3JF	34JS	36	32	3.1F	(3.0)PF	4.3	5.2	6.0	6.3	7.0	7.0	6.2	6.3	6.5	5.8	49	4.4	3.3	2.6F	22F	2.3F
3	2.7FS	3.2JF	(3.3)PF	3.4F	3.6F	3.7F	3.1F	3.2	4.5	50	6.2	7.0	6.5	5.8	5.4	55	5.0	4.5	4.3	32	2.5	1.9	1.1S	(1.9)PS
4	(1.9)S	20FS	2.4FS	(29)FS	2.8FS	(3.0)PF	(2.8)PS	2.5	3.9	4.9	5.1H	5.4H	52	5.4	5.3F	56	4.3	4.6	4.2S	34JS	28	2.6	(28)JF	3.0JF
5	3.2F	F	F	F	F	F	(2.9)JF	(3.0)JF	4.2	4.6	52	60	6.2	5.6	5.4	52	4.8	5.4	6.0	5.0	3.5F	3.3	32	3.0
6	2.6S	2.5JS	(2.8)JF	(2.4)S	(3.2)S	3.3	3.4JS	2.5JS	3.7	4.6	5.3	6.2	6.5	6.1	6.2	6.0	5.0	38	35	30	2.4	2.1	24	(26)JS
7	2.3JS	(2.3)JF	24JS	2.4JS	29	2.9	31	2.7	4.2	44	4.7	5.2	5.2	5.8	6.4	5.9	4.8	3.9	2.4	21	2.0	20FS	(23)F	26FS
8	2.6FS	(2.6)S	2.8	(2.8)S	27	(2.7)JS	3.2	(29)JS	4.5	4.9	4.9	5.5	5.1	5.4	5.7	5.6	4.7	4.4	33	2.6	1.9F	(1.8)PF	(1.8)PF	(21)PF
9	2.2F	(2.1)PF	2.2F	(2.8)PF	3.4FS	3.5FS	(31)PF	2.5FS	4.1S	4.4	49H	5.2	6.0	6.1	5.0	5.4	48	38	2.7	2.4	(2.2)PF	(1.9)JF	1.8JS	[1.8]FS
10	1.9JF	[2.0]FS	(2.3)PF	(27)PF	(28)PS	3.1	30S	29FS	3.7	4.4	5.1	6.2	5.9	5.5	5.7	5.8	5.1	43	3.5	(32)FS	(2.4)PS	(2.0)FS	(2.2)F	2.5S
11	(2.6)S	(2.5)PS	(2.4)PS	(30)PS	3.1F	28	(28)S	2.8S	4.3	4.7	49	6.3	5.2F	5.6	5.6	5.9	5.0	44	3.1	2.6	(2.3)S	1.8JS	1.7JS	(1.7)JS
12	1.8JS	(1.8)JS	(29)F	3.6	3.6	(34)S	3.5	[3.9]C	4.3	4.7	5.5	5.6	6.2	5.8	6.4	6.2	5.4	5.2	4.4	2.4F	22	22	2.4F	2.5F
13	(3.1)F	3.6	3.3S	(3.3)FS	3.4F	(3.2)JF	(30)F	(2.6)H	3.7	4.2	5.0S	5.7	[5.7]C	5.7	5.4	52	48	4.3	3.4F	28	24	2.1	20	2.2F
14	2.0JF	2.1F	2.2F	(2.8)PF	30FS	3.1S	3.1	26F	4.1	4.6	5.5	5.2	5.5	6.0	4.9	5.1	4.8	4.1	3.7	3.6	2.8F	(2.5)F	22F	(2.4)F
15	(2.7)JS	(3.3)JF	(35)JF	(33)FS	(30)FS	3.6	(36)FS	3.4	3.9	45	4.8JS	5.4	5.5	5.4S	5.7	5.5S	5.4	42S	3.5	(3.3)PS	3.4	2.8FS	(28)PS	(24)PS
16	[2.4]FS	(2.0)PF	C	C	C	C	(36)PS	(3.4)PS	4.3	4.5	5.2JS	5.2	5.2	5.2	50	5.3	5.6	44	(4.3)PS	(3.6)PS	(28)PS	(20)JS	(1.8)JF	(20)JF
17	(18)JF	(22)PF	3.1	(3.4)PS	3.2S	3.1	2.5	2.9	(4.7)PS	(53)PS	(4.8)H	60	5.9	5.3	54	5.4	5.2	46	3.7	2.7FS	2.6FS	2.3F	2.4FS	(26)PS
18	2.8S	31F	(28)PF	3.1F	32FS	3.4FS	3.3	3.2	4.4	4.9	5.4	5.4	6.2	60	5.5	5.5	5.8	5.0	4.9	5.4	32	(3.1)FS	(3.2)FS	(3.4)PS
19	(3.6)PS	(3.9)S	41	3.9	36F	2.8F	(25)FS	3.2JF	5.0	(5.8)P	5.5JF	6.2H	6.0	6.6	6.6	(7.2)S	7.2	(8.2)PS	5.3	(4.3)F	2.8FS	27	25	(28)FJ
20	(3.0)FP	F	F	F A	(2.9)PF	2.7	(25)SF	(28)FS	(39)S	4.5	5.9S	5.7	5.4	6.0	5.8	5.8	5.5	44	3.8	3.0	2.5	24	25	(2.8)F
21	(28)S	3.1	32	3.1	2.7F	22	2.0SF	23	4.3	52	5.5	6.2	68	5.6JS	5.8	6.0	5.7	47	4.4	3.4	2.7	2.1	20	22F
22	(23)PF	(27)PF	24F	2.4FS	2.4F	(2.2)PF	(22)PA	(26)PA	4.8	4.9	6.4	5.6	5.8	60	6.3	6.6	5.8	44	3.6	27F	(2.5)S	(1.7)JS	(1.7)JS	(2.0)S
23	(1.9)F	2.3F	(30)JS	[26]F	2.3JF	(20)JS	(2.0)JF	(2.4)JS	4.2	48	5.8	58	5.5	5.8	5.8	5.8	5.6	4.4	(2.4)JH	28F	(2.7)JF	2.1F	(18)S	(1.8)S
24	2.0	2.0	2.0	2.1	24	26F	(3.2)F	(3.4)F	4.2	5.3	5.6	5.8	6.2	6.1	5.4	5.6	5.6	48	3.0F	24F	2.3	20JF	1.4JF	(1.8)JF
25	(18)SF	2.1	(23)PF	2.5F	(2.5)F	(29)F	(25)F	(2.7)S	4.2FS	4.4	5.0	5.6	6.5	5.7	5.4	58	56	45	3.3F	33	2.7	2.1	14	2.0
26	20F	21F	2.3F	2.5	2.6F	2.8F	3.0	(3.2)F	(4.3)S	4.5H	5.4H	6.0	58	5.3	5.4	54	5.5	4.8	38	3.5	30	25	23	22
27	24	27S	3.0	3.1F	3.2	3.3	33S	3.3S	4.7	49	5.1	5.7	5.6	5.7	60	58	6.0	4.9	43	3.9	30	2.4	24	23F
28	(24)PS	[2.1]F	(19)F	(1.9)PF	27F	32	28	3.2	5.0	50	58	63	60	5.8	6.0	5.5F	5.6F	5.5	3.8	2.8F	2.7F	26F	23F	23F
29	2.1FA	2.1F	(24)FS	(29)F	32F	3.1F	3.2F	3.2F	4.9	5.4	5.4	5.6	5.7	5.6	5.5	62	6.8	49	3.6	24	22	1.8	S	S
30	(17)S	[16]S	(1.6)FS	(2.3)F	(26)F	28F	(2.3)F	2.8	4.7	4.9	4.9	5.7	6.0	(6.1)H	6.0JH	54	56	54	4.6	42	3.7	3.1F	25F	2.2
31	(25)F	(2.8)F	(2.8)F	(36)F	(29)F	28	(28)FH	(2.5)SF	42	5.4	5.0	5.1	(5.6)H	58	56	56	60	51	43	31F	24	21F	(20)S	17JS
Median	(24)	(23)	2.8	(25)	29	31	(30)	24	43	48	53	5.7	59	58	56	56	55	48	38	3.2	27	21	22	(23)
Count	31	29	28	24	29	29	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 51

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), January (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat. 38.7° N, Long. 77.1° W

75° W Mean Time

Scaled by: McC., E.J.W., J.W.P.

Calculated by: McC., E.J.W., J.W.P.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	(1.6)JS	(1.9)JA	(1.9)PF	(2.7)JF	(3.2)JF	(3.6)JF	(3.0)JF	[4.0]S	5.0	(5.4)PS	6.6	6.6	5.8F	6.0	5.2	(4.1)PF	[4.7]FS	(5.4)PS	4.4JS	3.7JS	3.0	(3.2)PS	(2.8)JF	(2.7)JF
2	(3.1)JF	(3.3)PF	(3.2)PF	3.5	3.5	3.1	3.1F	3.3F	4.9	6.0	5.7	6.6	6.8	6.5	6.4	5.8	6.2	5.4	4.5	3.8	3.0F	2.4F	2.2F	2.5F
3	2.8PS	3.2JF	3.4JF	3.3PF	3.7F	3.4	2.9F	3.8	5.0	6.3	6.6	6.8	6.1	5.4	5.5	5.4	4.6	4.2	3.7	3.0	2.0	1.8PS	1.9	(1.9)S
4	(1.9)PS	2.3FS	[2.6]FS	2.9FS	3.0JF	(3.2)JS	(2.5)FS	3.5	4.7	5.	5.7	5.2F	5.2	5.2F	5.4	5.0	4.2	4.5	3.7	(2.9)PF	2.7JS	(2.5)PF	2.9JF	3.3JS
5	3.3JF	F	F	F	F	F	(2.8)JF	3.6PS	4.5	5.0	5.6	6.2	5.8	5.5	5.4	5.0	4.9	6.0	5.4	4.1	3.5F	3.3JS	3.1	2.8
6	(2.5)S	[2.6]F	(2.3)S	3.0Z	3.2PF	3.4	2.7F	3.2	4.3	4.8	6.1	6.6	6.1	6.1	5.9	5.5	4.7	3.3	3.5	2.6	2.1JS	2.3	2.5JS	2.5
7	2.3	2.2	2.4	2.8	2.9JS	3.1	3.1	3.3	4.1	4.7	5.0	5.6	5.4	6.4	6.6	5.4	4.3	3.1	2.3	(2.1)S	2.1	2.1	2.5F	2.7
8	(2.6)S	2.5	(2.9)F	2.8	2.7	2.7	(3.1)JS	3.7JS	4.3	5.0	5.5	5.2	5.2	5.4	5.7	4.9	4.3	4.1	2.8	2.3	(1.8)PF	(1.7)FS	(1.9)JF	(2.2)PF
9	(2.2)JF	(2.0)JF	(2.5)PF	3.1PF	3.4PS	3.3FS	2.5FS	3.7PS	4.2	4.4	4.9	5.7	6.2	5.5	5.2	5.3	4.3	3.1PS	2.4	2.3	(2.1)PS	1.8JF	(1.7)JS	(1.8)PF
10	(1.9)JF	(2.1)PF	2.3FS	(2.8)PS	3.0	3.1PS	2.9	3.5	4.3	4.9	5.2	6.6	5.6	5.7	5.7	5.6	4.7	(3.7)S	3.3FS	2.8F	(2.3)PS	(2.1)F	2.4	(2.5)F
11	2.7	2.4JS	(2.9)JF	(3.2)PF	3.0FS	(2.8)PS	(2.8)JF	3.5	4.6	4.6	5.6	6.5	5.5	5.5	(5.6)S	5.5	4.9	3.8	3.1	2.3	1.8JS	1.7JS	(1.7)JS	(1.7)S
12	(1.7)JF	(2.3)F	3.3	3.7	3.5	3.4	[3.3]C	(3.3)PS	4.4	4.9	4.9	6.3	5.7	6.4	6.5	5.9	5.1	5.0	3.4F	2.3	2.2	2.3	2.4F	2.8F
13	(3.2)S	3.7	3.3	(3.5)SF	(2.8)F	(2.7)FS	(2.8)JF	3.1	4.2	(4.6)PS	5.6	C	C	5.5	5.0	4.9	4.6	3.8	3.0	2.5	2.2F	2.0	2.1	2.2F
14	2.1FS	2.2F	2.3FS	2.9PF	3.0	3.0	2.9JF	3.5	4.5	4.7	5.2	5.4	5.8	5.6	5.0	5.2	4.4	3.9	3.7	3.1FS	2.3FS	2.2F	(2.1)F	(2.7)F
15	(3.1)JF	(3.4)JF	3.5	(3.3)FS	(3.6)FS	3.6	3.6	3.7	4.1	4.7	5.2	5.9	5.4	5.7	5.4JS	4.9	5.0	4.1	3.5JS	(3.1)FS	3.3JS	2.6FS	(2.9)JS	(2.8)PS
16	FS	C	C	C	C	C	(3.5)JS	4.2	[4.4]C	4.9	5.2	5.3	5.3	5.1	5.1	5.6	4.9	4.2	4.1	2.9PS	(2.0)PS	1.9JS	(1.8)JF	(1.8)JF
17	(2.1)PF	(3.0)JS	3.2	(3.4)FS	3.2	2.8	2.5PS	3.8	5.3	5.2	5.7	5.6	6.0	5.2	5.2	5.5	4.9	4.3	2.9	2.5FS	2.5FS	2.3F	2.6FS	2.6
18	3.1	2.9FS	2.9FS	2.9F	3.2F	(3.3)PS	3.2	3.9	5.1PS	5.3H	5.0	5.8	6.1	5.4	5.8	5.6	5.7	4.7	5.1	4.5	3.1FS	(3.0)S	3.5JS	(3.5)FS
19	(3.7)S	4.2	(3.9)S	3.7FS	3.2F	2.4F	(2.4)FS	(3.9)S	5.7	4.8	6.6	5.4F	6.8	6.4	7.0	7.5	(7.6)PS	7.0	3.9	3.8	(2.6)S	(2.8)F	(2.7)F	[2.7]F
20	F	F	F	(2.7)PF	3.0F	(2.7)PS	2.8	(3.4)H	4.5	5.0	5.8	6.1	5.5	5.9	6.1	5.4	5.5	4.5	4.1	3.3	2.3	2.4	2.4F	(2.9)S
21	2.9F	3.2	2.3	2.8	2.5	2.0	2.0FS	3.6	5.2	5.1PS	5.8	7.0	6.4	5.8	5.9	6.2	5.0	4.5	3.5	3.2	2.6JS	2.0PS	(2.0)A	(2.0)JF
22	(2.5)PF	(2.6)JF	2.4F	2.4PF	(2.3)JF	2.2F	2.3	3.7	5.0	5.6	(5.5)H	5.7H	5.8	5.6	6.4	6.0	5.6	4.5	2.7F	(2.7)S	(2.0)S	1.6	1.9JS	(2.1)S
23	2.1F	(2.9)JS	(3.0)FJ	[2.6]F	(2.3)JS	(2.0)JF	(2.0)JS	(3.7)JS	(4.7)JH	5.6	6.6	(5.8)H	5.6	5.6	5.9	5.9	5.6	4.3	2.8	2.8F	2.4F	2.0JF	[1.8]SA	1.9
24	(2.0)S	2.0JS	2.0	2.2	2.5	(2.6)F	3.1JF	4.1	4.8	5.4	(5.6)H	6.4	6.2	5.8	5.4	5.8	5.2	4.0	(2.4)FS	2.4F	2.2F	2.0JF	1.8JF	(1.9)JF
25	(2.0)F	2.2	(2.2)F	2.6F	2.7F	(2.7)F	2.2F	3.8	4.6	4.5	5.2	6.2	6.4	5.9	5.4	5.5	5.2	3.7F	3.3F	3.2	2.6	1.9	1.9	2.0
26	2.1F	2.3F	2.3F	2.7F	2.8F	3.0	3.0F	3.7	4.7	5.5	6.0	6.0	5.8	5.4	5.2	5.6	5.0	4.4	3.4	3.3	2.8	2.5PS	2.3	2.3
27	2.5	2.9	3.0	3.1F	3.2	3.3	3.2	4.2	4.8	4.9	5.2JS	5.6	6.0	5.8H	5.7	5.8	5.8	4.9	3.8	3.6	2.4	2.3	2.4	2.2
28	(2.2)PF	(2.0)FF	(1.7)PF	(2.4)PF	3.0	3.0	2.8	4.0	4.9	6.0	(6.2)H	6.2	6.2	5.7	5.8	5.5F	5.8	4.8	3.2	2.8F	2.8F	2.4F	2.3F	2.1F
29	(2.0)FS	2.2F	(2.6)F	3.1F	3.1F	3.2	2.9F	4.0	5.3	5.0	5.6	5.5H	5.7	5.4	6.0	6.6	6.0	4.4	3.0	2.8	(1.9)F	S	S	S
30	[1.7]S	[1.6]S	(2.0)S	(2.4)F	(2.7)S	(2.5)S	2.2F	(3.8)S	4.9H	4.5	6.0	6.0	5.9	6.0H	5.7	5.4	(5.8)S	4.9	4.4	4.1	3.4	2.8	2.3	2.3F
31	2.5	(2.7)F	(2.9)F	(2.9)F	3.0F	(2.9)F	2.3	3.7	4.6	(5.5)H	5.4	5.4H	5.8	5.5	5.5H	5.8	5.8	4.3	(3.7)S	2.7	2.4F	(1.9)JS	1.8	(1.7)S
Median	(2.4)	2.4	2.8	2.9	3.0	3.0	2.8	3.7	4.7	5.0	5.6	6.0	5.8	5.6	5.7	5.5	5.0	4.3	3.5	2.9	2.4	2.2	2.3	(2.3)
Count	29	28	28	29	29	29	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	30	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1946 O - 703510

TABLE 52

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Form adopted June 1946

h' F1 (Characteristic), Km (Unit), January (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1° W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., E.J.W., J.W.P.

Calculated by: McC., E.J.W., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									G	G	220	210	200	(220)A	210	(210)A	G							
2									G	A	A	200H	A	A	230	230	G							
3									G	220	220	210	200H	210	210	A	G							
4									G	G	200H	220	210	230	220	230	G							
5									G	220	200	200	200H	220	210	230	220							
6									220	220	200	210	210	220	220	G	G							
7									210	240	230	210	220	220	230	210	G							
8									G	G	220	210	210	200H	230	230	G							
9									G	G	180	220H	230	210	190H	210H	210							
10									G	210	240H	230	210	220	210	210	G							
11									210	200	200	200H	220	200H	210	200	210							
12									220	200	230	220	210	200H	210	230	G							
13									230	210	220	(210)A	[220]C	220	210	210H	230							
14									(200)H	210	190H	210	200	210	210	240	G							
15									G	220	(210)A	(210)A	220	190	210	210	G							
16									G	210	190	220	200	190	200H	210	210							
17									G	G	220	250	[240]A	(220)A	190	210	220							
18									G	220	200	190H	210	190H	210	210H	G							
19									G	G	G	210	200	200H	230	240	230							
20									G	G	210	210	210	200H	200	230	220							
21									G	220	210H	[220]A	(220)A	210	210	(210)A	G							
22									G	200	210H	210	190	200H	200H	240	G							
23									G	230	200	220H	210H	210H	220	200H	G							
24									200	200	200H	200	200H	200H	200	220	G							
25									G	220	240	230	210	220	210	200	190H							
26									220	[220]A	220	220	230	220	200	180	220							
27									210	210	210	210H	210H	200	(200)S	(200)S	230							
28									G	210	220	210	210	220	180H	180H	200							
29									G	220	220	220	200	200	200	220H	G							
30									G	220	220	200H	210	190	230H	210H	210H							
31									210	230H	200H	200	200	200	220H	(200)H	220							
Median									210	220	210	210	210	210	210	210	220							
Count									10	23	29	31	30	30	31	24	14							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 53

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

fo F1 (Characteristic), Mc (Unit), January (Month), 19 54

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC. E.J.W., J.W.P.

Calculated by: McC. E.J.W., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									Q	Q	L	L	3.6	L	L	L	Q							
2									Q	L	A	L	L	L	L	L	Q							
3									Q	L	L	3.7	L	L	L	A	Q							
4									Q	Q	L	L	L	L	L	L	Q							
5									Q	L	L	3.8	[3.8]L	3.8	L	L	L							
6									L	L	3.4	3.7	L	L	3.5	Q	Q							
7									L	L	L	3.8	(3.8)L	(3.8)L	3.7	L	Q							
8									Q	Q	L	(3.6)L	3.9	L	L	L	Q							
9									Q	Q	L	(3.8)L	[3.8]L	3.7	L	L	L							
10									Q	L	L	3.8	3.8	[3.7]L	(3.6)L	L	Q							
11									L	L	L	3.7H	L	3.8H	L	L	L							
12									L	L	L	3.8	3.8	[3.8]L	3.8	L	Q							
13									L	L	L	L	C	3.7	L	L	L							
14									L	L	L	L	L	L	L	L	Q							
15									Q	L	L	L	L	3.8	L	L	Q							
16									Q	L	L	(3.7)L	[3.6]L	(3.6)L	L	L	L							
17									Q	Q	L	L	L	L	(3.5)L	L	L							
18									Q	L	L	3.6H	3.9	3.5H	3.6	(3.7)H	Q							
19									Q	Q	Q	L	3.6	L	L	L	L							
20									Q	Q	3.7	(3.7)P	(3.8)L	3.5H	L	L	L							
21									Q	L	L	A	(3.9)L	(3.8)L	(3.6)F	L	Q							
22									Q	L	(3.6)L	[3.7]L	3.8	3.8H	3.5H	L	Q							
23									Q	L	3.6	[3.8]L	3.9	3.9	3.8	L	Q							
24									2.1	[2.9]L	3.7H	3.7	L	L	L	L	Q							
25									Q	L	L	L	4.0	3.9	[3.4]L	3.0	L							
26									L	L	3.8	3.9	4.0	4.0	[3.5]L	3.0	3.0							
27									L	L	L	L	3.9H	(3.7)L	L	L	L							
28									Q	L	L	3.3	4.2	L	L	L	L							
29									Q	L	L	(3.9)L	3.9	3.7	3.6	L	Q							
30									Q	L	L	L	3.8	3.8	3.8H	L	L							
31									L	(3.5)H	3.6H	[3.8]L	4.0	3.9	(4.0)H	(3.6)H	L							
Median									–	–	3.6	3.7	3.8	3.8	3.6	–	–							
Count									1	2	7	19	21	20	14	4	1							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1946 O 702519

Form adopted June 1946

TABLE 54

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), January (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc. E.J.W., J.W.P.

Calculated by: Mc. E.J.W., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									S	110	110 H	110 H	110	110	110 H	110	S							
2									A	A	A	A	(120) B	110	110	A	A							
3									S	(110) A	110 H	110	110 H	(110) A	110	110	A							
4									S	110 H	(110) A	110	110	(110) A	110	[120] A	<140 S							
5									S	110	110	110	110	110	120	110	120							
6									S	A	A	A	(120) A	120	110	(110) A	(130) S							
7									S	110	110	110	110	110	110	110	A							
8									A	110 H	110	110 H	110	120	110	120	(120) A							
9									A	110 F	110	110	110	110	110	(110) S	A							
10									S	A	110	110	110	110	110	110	(120) S							
11									S	(110) A	110	110	110	110	110	110	S							
12									S	110	100 H	100 H	(100) A	100	100 H	110	120							
13									S	A	A	(110) A	[110] C	110	(120) A	120 H	120							
14									S	A	A	A	100	110	[110] A	110	120							
15									S	A	A	A	110 H	110	110 H	110 H	(110) S							
16									<150 S	A	(120) A	(110) A	110	110	110	(110) A	110 H							
17									S	A	A	(110) A	110	110	110	[120] A	120							
18									S	120	110	110 H	(120) S	100	110	110	120							
19									S	110 H	100	110	100	(120) A	110	110	(110) S							
20									S	110	110 H	110 H	110	110	110 H	(110) A	120 F							
21									A	110	(110) A	A	A	A	A	A	A							
22									A	A	110	110	100	110	110	110 H	(120) A							
23									S	A	(120) A	A	A	A	110	(110) A	(110) A							
24									S	110	110	110	110	110	110	110	120							
25									S	110	110	110	110	110	(110) A	A	A							
26									A	A	A	A	110 H	110	A	A	A							
27									A	110	110	[100] A	100	A	A	110 H	(110) S							
28									(120) S	110	110	110	110	110	110	110	110							
29									(120) S	120	110	110	110	110	110 H	110	110							
30									(120) S	(120) A	120	110	110	110	110	110	110 H							
31									S	A	110	110	110	110	110	110	110							
Median									—	110	110	110	110	110	110	110	120							
Count									3	19	24	24	29	28	20	27	21							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 55

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), January (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC, E.J.W., J.W.P.

Calculated by: McC. E.J.W., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									S	$(2.2)^F$	2.3^H	2.5^H	2.6	2.7	2.5^H	(2.2)A	S							
2									A	A	A	A	$(2.5)^A$	2.6	$(2.5)^A$	A	A							
3									S	2.2^H	2.4^H	2.7	2.8^H	[2.7]A	2.6	2.3	A							
4									S	$(2.2)^H$	2.4	2.7	2.7	[2.6]A	2.5	[2.2]A	$(1.8)^H$							
5									S	2.4	2.7	2.8	2.9	2.8	2.6	2.3	2.1							
6									S	A	A	A	2.8	2.8	2.6	2.4^H	1.8							
7									S	2.2	2.4	2.6	2.8	2.7	2.6	$(2.3)^P$	A							
8									A	2.0^H	2.5	$(2.6)^P$	2.8	2.7	2.5	2.2	1.9							
9									A	2.1^F	2.4	2.7	$(2.8)^F$	2.6	2.5	2.3^H	A							
10									S	A	$(2.5)^P$	2.7	2.8	2.7	2.6	[2.3]A	2.0							
11									S	A	$(2.5)^P$	2.8	2.8	2.8^H	2.7	2.4	S							
12									S	2.2	2.5^H	2.7^H	[2.3]A	2.8	2.6^H	2.4	1.9							
13									S	A	A	$(2.7)^A$	[2.8]C	$(2.8)^P$	2.6	2.4^H	$(1.9)^P$							
14									S	A	A	A	2.9	2.8	[2.6]A	2.4	$(2.2)^P$							
15									S	A	A	A	2.7^H	2.7	2.5^H	$(2.4)^H$	S							
16									$(1.7)^P$	$(2.2)^H$	2.5^H	$(2.7)^A$	2.7	2.7	2.6	[2.3]B	$(1.9)^H$							
17									S	A	A	$(2.7)^A$	$(2.8)^A$	$(2.8)^A$	$(2.6)^A$	[2.4]A	$(2.1)^A$							
18									S	2.3	2.5	2.6^H	2.8	2.8	2.7	2.5	$(2.1)^P$							
19									S	2.1^H	$(2.5)^P$	2.7	2.8	2.8	2.5	2.5	2.0^H							
20									1.7	1.9	$(2.4)^H$	$(2.5)^H$	2.7	2.5	2.5^H	$(2.4)^H$	$(2.0)^P$							
21									A	2.3^F	2.5	A	A	A	A	A	A							
22									A	A	2.5	2.7	2.8	2.7	2.6	2.4^H	2.1							
23									S	A	A	A	A	A	A	A	A							
24									S	2.2	2.6	2.8	2.9	2.8	2.7	2.5	2.2							
25									1.8	2.2	$(2.5)^P$	2.8	[2.9]A	3.0	A	A	A							
26									A	A	A	A	3.0^H	2.8	A	A	A							
27									A	$(2.4)^A$	$(2.7)^A$	A	A	2.8	[2.6]A	2.4^H	$(2.1)^A$							
28									$(1.7)^S$	2.5	2.8	2.7	3.0	2.9	2.8	2.5	2.1							
29									1.8^H	2.4	2.7	2.9	2.9	3.0	2.7^H	2.7^F	A							
30									$(1.6)^A$	2.4^H	2.7	2.9	3.0	2.9	2.8	[2.5]A	2.2^H							
31									F	A	2.5	2.8	2.8	2.8	$(2.8)^P$	2.4	F							
Median									1.7	2.2	2.5	2.7	2.8	2.8	2.6	2.4	2.0							
Count									6	19	23	23	28	29	27	26	18							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 56

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc,Km (Unit), January (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC. E.J.W., J.W.P.

Calculated by: McC. E.J.W., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	24/120	2.4/120	E	2.0Y/120	2.4/110	2.2Y/120	E	2.2/110	G	G	2.8/120	3.1/120	4.2/120	4.2/120	38/120	4.1/110	2.4/120	3.6Y/110	51Y/110	E	E	E	E	E
2	E	E	E	E	3.0Y/140 H	2.4/110 H	2.9Y/100	3.1Y/100 H	32Y/110 H	4.6/110	4.9Y/100 H	3.7Y/100 H	3.3/110	43Y/110	29/110	3.6Y/110	29Y/120	4.7Y/110	3.4/110	E	2.9Y/100	2.7Y/100 H	E	2.3/100
3	E	E	E	E	E	E	E	2.3Y/110 H	G	37Y/110 H	G	G	2.3/100	4.7Y/100	3.0/130	68Y/110	27Y/120	2.8Y/140	70/120	3.4Y/110 H	2.3Y/100 H	E	E	E
4	E	E	9.0Y/110	6.8Y/110	E	26/120	30Y/120	3.0Y/110	G	G	23Y/100	G	G	36Y/110	G	24/120	1.9/110	2.0/120 H	24(130)S	3.3/130	24Y/110	24Y/110	2.9Y/110	E
5	E	E	2.4/110	2.4/100	2.4Y/100	24Y/100 H	2.3Y/100	23(130)S	2.9Y/110	G	G	G	G	24/100	G	G	G	E	E	E	E	E	E	E
6	E	E	24/110	E	2.3/110	E	2.4/110	E	G	2.4/110	26/110	4.3Y/110	2.7/110	G	G	2.3/110	G	E	2.6/110	24/110	2.7/110	E	E	3.3/100
7	24/100	2.7/100	22/100	E	22/100	E	E	E	G	2.4/110	G	G	G	G	G	G	2.1/120	E	E	E	2.4/110	E	E	E
8	E	E	24Y/120	39Y/110	27/110	3.2/100	2.4/110	38Y/100	39/110	G	G	G	2.4Y/100	G	G	G	1.9/120	24/110	E	E	2.4/100	24/100 H	2.3/100	E
9	E	E	E	E	E	E	20(120)S	E	55Y/110	G	G	G	G	G	G	G	24/120	E	E	E	E	E	E	32/100
10	E	E	E	E	E	E	E	E	24/130	3.2Y/110	G	76/130	G	G	G	38/120	G	E	E	E	E	E	E	E
11	E	E	E	E	E	E	E	E	G	9.0Y/110	34Y/120	G	G	G	G	G	G	E	E	E	E	E	E	E
12	E	E	E	E	E	23/100	E	C	G	G	G	G	3.6/100	G	G	G	G	E	26Y/100	2.4/100	23/100	2.5/100	2.3/100	E
13	E	E	E	E	E	E	21/110	E	G	32/110	3.6Y/110	3.5Y/110	C	G	3.1Y/110	G	G	E	E	E	E	E	24Y/110	30/110
14	22Y/120	2.4/110	E	37Y/120	E	E	23/110	E	2.4Y/140	3.6/110	37/110	36/110	G	G	3.7/110	G	G	E	E	E	E	E	E	E
15	E	E	2.2/110	E	E	E	E	E	3.2F/110	37Y/110	33/110 H	36/110	37/120	G	G	G	35Y/110 H	3.1/110	2.9/110	2.3/110	23/110	23/110	25/100	2.4/100
16	2.7Y/100	28/100	C	C	C	C	24/110	24Y/110	G	28Y/110	3.0Y/110 H	3.5Y/110	G	G	G	3.1Y/110	G	2.4Y/110	3.5/110	31/110	E	E	E	E
17	E	E	E	E	E	E	24/110	E	G	36/120	3.3Y/110	3.5Y/110	17.2Y/120	43Y/110	3.7/120	33/110	28Y(120)S	E	2.4/100	31/100	2.3Y/100	E	E	E
18	E	E	E	E	30Y/110	24/110	3.1Y/110	2.4/110	2.3Y/100	G	G	84Y/110	48/110	G	G	G	G	E	E	E	E	E	2.2/110	E
19	E	E	2.2/120	3.0/110	3.0/110	E	24/100	E	24Y/100	G	G	G	G	3.7/100	G	G	G	28Y/110	2.4/110	30/110	E	2.1/110	E	E
20	E	E	31Y/130	42/120 H	7.5Y/110 H	E	E	42Y/110	G	G	G	G	G	G	G	2.1/100	28Y/100 H	3.8/100	30Y/100	E	E	E	2.6Y/110	29/100
21	26/100	E	E	2.3/100	2.7/120	23/120	2.4/110	E	2.0/110 H	G	3.7Y/110	10.2/100	54/100	4.7/110 H	4.3/110	4.2/110	42/100	3.2/110	25Y/120	3.0/110	22(120)S	28/120	2.7/120	2.4/120
22	2.3/110	3.0/110	2.7Y/110 H	2.2/120	E	5.0/120	44/120	4.1/110	3.7/110	2.9/110	G	G	G	G	G	G	23/120	E	E	E	E	E	2.2/100	(2.2)S/100
23	E	E	E	E	E	E	E	E	G	36/110	39/120	4.8Y/100 H	31/110	3.4/110	3.8/110	3.3/110	3.8Y/120	1.8/110	3.3/110 H	2.7Y/130	23Y/120	E	27Y/100 H	2.7/100 H
24	E	E	E	2.4/100	E	2.3/110 H	23/100 H	E	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E	28/110
25	3.4/100	2.6/100	E	E	E	21/100	E	E	G	G	G	G	3.4/110	G	2.6/110	2.4/110	22/110	3.0/110	2.4/110	43/100	29Y/100	E	E	E
26	E	2.3/100	E	4.7/100	3.8Y/110	E	E	24/100	2.0F/120	4.0/120	42/120	35Y/120	G	3.3Y/110	34Y/110	4.0/100	33/100	22/100	E	E	E	E	E	E
27	2.6Y/110	E	E	E	E	E	E	E	20/120	29Y(120)S	3.9Y/100	28/110	2.9/110	2.7/110	27/110	G	2.3/120	E	E	E	23/100	23/100	2.3/100	2.1Y/100
28	2.2/100	E	E	E	E	E	3.2/120	E	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E	29/100
29	34/100	2.4/100	2.3/100	E	2.1/100	4.4Y/100	2.1/100	2.3/100	G	4.1Y/110	G	G	G	G	G	G	31/130	E	E	3.1Y/110	2.4/100	3.0/100	3.7/100	2.9/100
30	E	E	E	E	E	E	E	28/100	6.2/100	3.7/100	G	G	G	G	G	2.6/130	G	E	E	31/100	36/100	E	E	E
31	E	2.3/100	E	2.2/110	E	E	E	E	G	2.3/110	G	G	G	G	G	G	G	2.3/120 H	E	22/100	E	24/100	E	E
Median	* *	* *	* *	* *	* *	* *	2.1	* *	* *	2.4	* *	* *	* *	* *	* *	* *	1.9	* *	* *	* *	* *	* *	* *	* *
Count	31	31	30	30	30	30	31	30	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31

XX MEDIAN f Es LESS THAN MEDIAN F°e OR LESS THAN LOWER FREQUENCY LIMIT OF RECORDER

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 57

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

(M1500)F2 (Characteristic), ____ (Unit), January (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc. E.J.W., J.W.P.

Calculated by: Mc. E.J.W., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	$(2.1)^P_F$	$(2.0)^J_F$	$(2.3)^F_F$	F	$(2.3)^P_S$	F	2.6	2.6^F	$(2.3)^P_F$	2.5	2.4^F	2.3^F	2.4	2.5	2.5^F	$(2.3)^J_S$	$(2.4)^F_S$	2.3	2.3^F	2.1^F_S	$(2.4)^F_F$	$(2.2)^J_S$
2	$(2.5)^P_F$	$(2.0)^P_F$	$(2.0)^J_F$	$(1.9)^J_S$	2.1	2.1	2.1^F	$(2.3)^P_F$	2.4	2.3	2.5	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.2	2.3	2.2^F	2.2^F	2.2^F
3	2.2^F_S	$(2.1)^J_F$	$(2.2)^P_F$	2.1^F	2.1^F	2.3^F	2.4^F	2.3	2.5	2.5	2.5	2.5	2.5	2.6	2.3	2.5	2.5	2.4	2.4	2.3	2.6	2.1	2.0^S	$(2.1)^F_S$
4	$(2.0)^S$	2.1^F_S	2.1^F_S	$(2.1)^F_S$	2.2^F_S	$(2.3)^P_F$	$(2.4)^F_S$	2.3	2.5	2.6	2.5^H	2.5^H	2.5	2.4	2.4^F	2.5	2.4	2.2	2.3^S	S	2.5	2.2	$(2.0)^J_F$	$(2.2)^J_F$
5	2.1^F	F^S	F	F	F	F	$(2.2)^J_F$	F	2.6	2.5	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.2	1.9	2.0	2.2^F	2.2	2.2	2.2
6	2.2^S	$(2.1)^J_S$	$(1.8)^J_F$	$(2.0)^S$	$(2.0)^S$	2.1	$(2.4)^J_S$	$(2.3)^J_S$	2.4	2.5	2.4	2.4	2.4	2.4	2.5	2.6	2.5	2.4	2.2	2.4	2.4	2.0	2.1	$(2.2)^J_S$
7	$(2.2)^J_S$	$(2.2)^J_F$	$(2.1)^J_S$	$(2.2)^J_S$	2.1	2.2	2.3	2.4	2.6	2.4	2.5	2.4	2.4	2.2	2.3	2.6	2.6	2.5	2.2	2.1	2.0	1.9^F_S	$(1.9)^F$	2.1^F_S
8	2.2^F_S	$(2.1)^S$	2.0	$(2.0)^S$	2.2	$(2.0)^J_S$	2.2	$(2.3)^J_S$	2.4	2.5	2.5	2.5	2.4	2.3	2.4	2.5	2.6	2.4	2.3	2.4	2.3^F	F	F^S	$(2.1)^F_F$
9	2.0^F	$(2.1)^P_F$	2.1^F	$(2.1)^P_F$	2.1^F_S	2.3^F_S	$(2.5)^F_F$	2.4^F_S	2.6^S	2.6	2.3^H	2.2	2.5	2.5	2.5	2.4	2.6	2.5	2.2	2.1	$(2.2)^P_F$	F^S	S	F^S
10	F^S	F^S	$(2.2)^P_F$	$(2.2)^F_F$	$(2.2)^J_S$	2.3	2.3^S	2.3^F_S	2.6	2.6	2.5	2.4	2.4	2.4	2.4	2.5	2.5	2.4	2.2	$(2.4)^F_S$	$(2.4)^P_S$	$(2.0)^F_S$	$(2.1)^F$	2.1^S
11	$(2.1)^S$	$(2.2)^P_S$	$(2.2)^P_S$	$(2.0)^F_S$	2.3^F	2.1	$(2.2)^S$	2.4^S	2.6	2.6	2.4	2.4	2.5^F	1.9	2.4	2.4	2.4	2.5	2.2	2.4	S	S	S	S
12	S	$(2.2)^J_S$	$(2.1)^F$	2.1	2.2	$(2.2)^S$	2.3	C	2.5	2.5	2.6	2.4	2.6	2.2	2.4	2.5	2.4	2.4	2.5	2.0^F	2.1	1.9	2.1^F	2.1^F
13	$(2.1)^F$	2.1	2.2^S	$(2.1)^J_S$	2.1^F	$(2.1)^J_F$	$(2.1)^F$	$(2.3)^H$	2.5	2.6	2.4^S	2.4	C	2.4	2.4	2.4	2.3	2.4	2.3^F	2.3	2.3	2.2	2.2	2.1^F
14	$(2.2)^J_F$	2.1^F	2.0^F	$(2.2)^P_F$	2.2^S	2.2^S	2.3	2.3^F	2.6	2.6	2.6	2.3	2.5	2.5	2.5	2.5	2.6	2.3	2.2	2.4	2.5^F	$(2.1)^F$	2.2^F	$(2.1)^F$
15	S	F	F	$(2.1)^F_S$	$(2.0)^F_S$	2.1	$(2.1)^F_S$	2.3	2.4	2.5	$(2.3)^J_S$	2.4	2.4	2.3^S	2.5	2.5^S	2.3	2.5^S	2.3	$(2.2)^F_S$	2.3	2.2^F_S	$(2.1)^F_S$	$(2.2)^F_S$
16	F^S	$(2.0)^F_F$	C	C	C	C	$(2.3)^P_S$	$(2.3)^P_S$	2.5	2.6	$(2.6)^J_S$	2.5	2.5	2.4	2.4	2.3	2.5	2.4	$(2.4)^F_S$	$(2.4)^F_S$	$(2.5)^P_S$	S	F	F
17	F	$(2.2)^P_F$	2.2	$(2.3)^S_S$	2.3^S	2.3	2.1	2.3	$(2.4)^P_S$	$(2.6)^P_S$	$(2.6)^H$	2.6	2.6	2.6	2.3	2.3	2.5	2.4	2.2	2.2^F_S	2.4^F_S	2.2^F	2.2^F_S	$(2.1)^F_S$
18	2.1^S	2.2^F	$(2.2)^P_F$	2.1^F	2.2^F_S	2.1^F_S	2.3	2.6	2.6	2.7	2.5	2.5	2.4	2.4	2.3	2.4	2.3	2.3	2.1	2.4	2.4	$(2.1)^F_S$	$(2.1)^F_S$	$(2.1)^F_S$
19	$(2.1)^P_S$	$(2.1)^S$	2.2	2.1	2.3^F	2.2^F	$(2.0)^F_S$	F	2.6	$(2.6)^P$	F	2.6^H	2.2	2.3	2.0	$(2.1)^S$	2.1	$(2.3)^P_S$	2.4	$(2.5)^F$	2.3^F_S	2.1	2.2	F
20	$(2.0)^P_F$	F	F	F^A	$(2.1)^P_F$	2.0	$(2.0)^S_F$	$(2.3)^F_S$	$(2.4)^S$	2.4	2.5^S	2.5	2.4	2.2	2.3	2.4	2.4	2.5	2.1	2.4	2.3	2.0	2.0	$(2.0)^F$
21	$(2.1)^S$	2.1	2.0	2.4	2.4^F	2.1	2.2^S_F	2.4	2.4	2.5	2.4	2.4	2.4	$(2.4)^J_S$	2.4	2.4	2.5	2.4	2.4	2.2	2.2	2.2	2.1	2.1^F
22	$(2.2)^P_F$	$(2.2)^P_F$	2.2^F	2.3^F_S	2.2^F	$(2.2)^F_F$	$(2.1)^P_A$	$(2.3)^P_A$	2.4	2.6	2.4	2.5	2.3	2.3	2.3	2.4	2.6	2.5	2.5	2.1^F	$(2.4)^S$	S	S	$(1.9)^S$
23	$(2.1)^F$	2.1^F	$(2.1)^J_S$	F	F	$(2.3)^J_S$	$(2.2)^J_F$	$(2.4)^J_S$	2.4	2.5	2.3	2.5	2.4	2.4	2.4	2.4	2.5	2.4	$(2.3)^J_H$	2.3^F	$(2.5)^J_F$	2.2^F	$(2.1)^S$	$(2.0)^S$
24	2.0	2.1	2.1	2.0	2.2	2.1^F	$(2.1)^F$	$(2.4)^F$	2.6	2.5	2.7	2.3	2.4	2.5	2.5	2.4	2.5	2.6	2.4^F	2.2^F	2.2	$(2.3)^J_F$	F	F
25	$(2.1)^J_F$	2.0	$(2.1)^P_F$	2.1^F	$(2.2)^F$	$(2.4)^F$	$(2.4)^F$	$(2.4)^S$	2.5^F_S	2.6	2.4	2.3	2.5	2.5	2.4	2.4	2.6	2.5	2.2^F	2.4	2.4	2.4	2.1	2.1
26	2.2^F	2.3^F	2.1^F	2.2	2.2^F	2.1^F	2.1	$(2.3)^F$	$(2.5)^S$	2.5^H	2.4^H	2.4	2.5	2.5	2.5	2.3	2.5	2.5	2.4	2.3	2.3	2.3	2.2	2.1
27	2.1	2.2^S	2.2	2.1^F	2.1	2.2	2.3^S	2.4^S	2.6	2.6	2.5	2.3	2.3	2.3	2.4	2.4	2.7	2.4	2.2	2.3	2.4	2.2	2.0	2.3^F
28	$(2.1)^P_S$	F	$(2.1)^F$	$(2.1)^P_F$	2.2^F	2.3	2.2	2.4	2.5	2.5	2.6	2.4	2.4	2.4	2.4	2.5^F	2.4^F	2.6	2.5	2.2^F	2.3^F	2.5^F	2.3^F	2.2^F
29	2.1^F_A	2.1^F	$(2.2)^F_S$	$(2.1)^F$	2.1^F	2.2^F	2.3^F	2.4^F	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.3	2.5	2.3	2.4	2.3	2.4	S	S	S
30	S	S	$(2.2)^F_S$	$(2.1)^F$	$(2.4)^F$	2.4^F	$(2.3)^F$	2.5	2.5	2.6	2.3^H	2.4	2.4	$(2.4)^H$	$(2.6)^J_H$	2.5	2.3	2.5	2.3	2.3	2.3	2.4^F	2.3^F	2.1
31	$(2.1)^F$	$(2.1)^F$	$(2.1)^F$	$(2.1)^F$	$(2.1)^F$	2.3	$(2.3)^F_H$	$(2.2)^J_F$	2.7	2.6	2.3	2.3	$(2.3)^H$	2.4	2.4	2.4	2.5	2.6	2.4	2.3^F	2.3	2.2^F	$(2.1)^S$	S
Median	(2.1)	(2.1)	(2.1)	(2.1)	2.2	2.2	(2.3)	2.3	2.5	2.6	2.5	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.3	2.3	2.3	2.2	2.1	2.1
Count	24	24	27	27	28	28	31	27	31	31	30	31	30	31	31	31	31	31	31	30	30	25	24	24

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE : 1948 O - 703519

Form adopted June 1946

TABLE 58

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

(M3000)F2 (Characteristic), ______ (Unit), January (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc. E.J.W., J.W.P.

Calculated by: Mc. E.J.W., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	(3.2)PF	(3.0)JF	(3.3)PF	F	(3.3)PS	F	3.7	3.7F	(3.4)PF	3.5	3.5F	3.4F	3.4	3.6	3.6F	(3.4)JS	(3.5)PS	3.4	3.3F	3.1FS	(3.4)PF	(3.3)JS
2	(3.5)PF	(3.0)PF	(3.0)JF	(2.8)JS	3.2	3.1	3.1F	(3.4)PF	3.5	3.4	3.6	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.4	3.3	3.3	3.3F	3.2F	3.3F
3	3.2FS	(3.1)JF	(3.2)PF	3.1F	3.1F	3.4F	3.4F	3.4	3.6	3.6	3.6	3.6	3.6	3.7	3.4	3.6	3.6	3.5	3.5	3.4	3.7	3.1	3.0S	(3.1)PS
4	(3.0)S	3.1FS	3.1FS	(3.1)FS	3.3FS	(3.3)PF	(3.4)PS	3.4	3.6	3.7	3.5H	3.6H	3.6	3.5	3.5F	3.6	3.5	3.3	3.3S	S	3.6	3.2	(3.0)JF	(3.3)JF
5	3.1	FS	F	F	F	F	(3.2)JS	F	3.7	3.6	3.5	3.5	3.5	3.5	3.4	3.6	3.4	3.2	2.9	3.0	3.2F	3.3	3.2	3.3
6	3.2S	(3.1)JS	(2.8)JF	(3.0)S	(3.0)S	3.1	(3.5)JS	(3.3)JS	3.5	3.6	3.4	3.5	3.5	3.4	3.6	3.7	3.5	3.4	3.2	3.4	3.4	2.9	3.1	(3.2)JS
7	(3.2)JS	(3.2)JF	(3.1)JS	(3.2)JS	3.1	3.2	3.4	3.5	3.7	3.5	3.6	3.5	3.5	3.3	3.4	3.7	3.7	3.6	3.3	3.1	3.0	2.9FS	(2.9)F	3.1FS
8	3.2FS	(3.1)S	3.0	(3.0)S	3.2	(3.0)JS	3.2	(3.4)JS	3.5	3.6	3.6	3.6	3.5	3.4	3.5	3.6	3.7	3.5	3.4	3.5	3.4F	F	FS	(3.1)PF
9	3.0F	(3.1)PF	3.2F	(3.1)PF	3.1FS	3.3FS	(3.6)PF	3.4FS	3.7S	3.7	3.3H	3.3	3.6	3.6	3.6	3.5	3.7	3.5	3.2	3.2	(3.2)PF	FS	S	FS
10	FS	FS	(3.2)FF	(3.2)PF	(3.2)PS	3.4	3.4S	3.3FS	3.6	3.7	3.6	3.4	3.5	3.5	3.5	3.6	3.6	3.5	3.2	(3.4)FS	(3.5)PS	(3.0)FS	(3.1)F	3.1S
11	(3.0)S	(3.2)PS	(3.2)PS	(3.0)PS	3.3F	3.0	(3.2)S	3.5S	3.7	3.7	3.4	3.5	3.6F	2.9	3.5	3.5	3.5	3.5	3.2	3.4	S	S	S	S
12	S	(3.2)JS	(3.1)F	3.1	3.2	(3.2)S	3.3	C	3.4	3.6	3.7	3.5	3.5	3.2	3.5	3.6	3.5	3.5	3.6	2.9F	3.0	2.9	3.1F	3.0F
13	(3.1)F	3.1	3.2S	(3.0)FS	3.1F	(3.1)JF	(3.1)F	(3.4)H	3.5	3.6	3.5S	3.5	C	3.5	3.5	3.5	3.4	3.5	3.4F	3.3	3.3	3.3	3.2	3.1F
14	(3.3)JF	3.1F	3.0F	(3.2)PF	3.2FS	3.2S	3.4	3.4F	3.7	3.7	3.7	3.4	3.6	3.6	3.5	3.6	3.7	3.4	3.2	3.5	3.6F	(3.1)F	3.2F	(3.1)F
15	S	F	F	(3.1)FS	(3.0)FS	3.1	(3.1)FS	3.3	3.5	3.6	(3.4)JS	3.5	3.5	3.4S	3.6	3.6S	3.4	3.6S	3.4	(3.2)PS	3.4	3.2FS	(3.1)PS	(3.2)PS
16	FS	(3.0)PF	C	C	C	C	(3.4)PS	(3.4)PS	3.6	3.7	(3.7)JS	3.6	3.6	3.5	3.5	3.4	3.6	3.5	(3.5)PS	(3.5)PS	(3.5)PS	S	F	F
17	F	(3.3)PF	3.2	(3.4)PS	3.3S	3.4	3.2	3.4	(3.4)PS	(3.7)PS	(3.7)H	3.7	3.7	3.7	3.4	3.3	3.6	3.5	3.3	3.2FS	3.5FS	3.3F	3.2FS	(3.2)PS
18	3.1S	3.3F	(3.2)PF	3.1F	3.2FS	3.2FS	3.3	3.7	3.7	3.7	3.6	3.5	3.4	3.5	3.4	3.5	3.4	3.4	3.0	3.5	3.4	(3.0)FS	(3.1)FS	(3.1)PS
19	(3.1)PS	(3.1)S	3.2	3.1	3.4F	3.2F	(3.0)FS	F	3.7	(3.7)P	F	3.7H	3.2	3.4	2.9	(3.1)S	3.1	(3.3)PS	3.4	(3.5)F	3.3FS	3.1	3.2	F
20	(3.0)PF	F	F	FA	(3.1)PF	3.0	(3.0)SF	(3.3)FS	(3.4)S	3.5	3.6S	3.6	3.5	3.3	3.4	3.5	3.5	3.5	3.1	3.5	3.3	3.0	3.0	(3.0)F
21	(3.1)S	3.1	3.0	3.4	3.5F	3.1	3.2SF	3.4	3.4	3.6	3.5	3.5	3.5	(3.6)JS	3.5	3.4	3.6	3.5	3.5	3.2	3.3	3.2	3.1	3.1F
22	(3.3)PF	(3.3)PF	3.2F	3.4FS	3.2F	(3.3)PF	(3.1)PA	(3.4)PA	3.5	3.7	3.5	3.6	3.3	3.4	3.3	3.5	3.6	3.6	3.5	3.1F	(3.5)S	S	S	(2.8)S
23	(3.1)F	3.1F	(3.1)JS	F	F	(3.4)JS	(3.2)JF	(3.5)JS	3.5	3.6	3.3	3.6	3.5	3.5	3.4	3.5	3.6	3.5	(3.3)JH	3.3F	(3.5)JF	3.3F	(3.1)S	(3.0)S
24	3.0	3.1	3.1	3.0	3.2	3.1F	(3.1)F	(3.4)F	3.7	3.6	3.7	3.4	3.5	3.5	3.5	3.5	3.5	3.7	3.5F	3.2F	3.3	(3.3)JF	F	F
25	(3.1)SF	3.0	(3.1)PF	3.1F	(3.2)F	(3.4)F	(3.5)F	(3.4)S	3.6FS	3.7	3.5	3.4	3.5	3.6	3.5	3.5	3.7	3.6	3.3F	3.5	3.5	3.5	3.1	3.1
26	3.2F	3.3F	3.1F	3.2	3.2F	3.1F	3.2	(3.3)F	(3.6)S	3.6H	3.4H	3.4	3.6	3.5	3.6	3.4	3.6	3.5	3.5	3.3	3.4	3.4	3.3	3.1
27	3.1	3.2S	3.2	3.1F	3.1	3.2	3.3S	3.4S	3.7	3.7	3.6	3.4	3.4	3.4	3.5	3.5	3.8	3.5	3.2	3.4	3.5	3.3	3.0	3.4F
28	(3.2)PS	F	(3.1)F	(3.0)PF	3.2F	3.4	3.3	3.5	3.5	3.6	3.7	3.5	3.5	3.5	3.5	3.5F	3.4F	3.7	3.6	3.3F	3.3F	3.5F	3.3F	3.3F
29	3.1FA	3.2F	(3.3)FS	(3.1)F	3.1F	3.3F	3.3F	3.5F	3.6	3.6	3.5	3.6	3.5	3.5	3.5	3.4	3.6	3.4	3.5	3.3	3.5	S	S	S
30	S	S	(3.3)FS	(3.1)F	(3.4)F	3.5F	(3.3)F	3.6	3.5	3.7	3.3H	3.5	3.4	(3.4)H	(3.6)JH	3.6	3.4	3.6	3.3	3.3	3.4	3.4F	3.3F	3.1
31	(3.1)F	(3.0)F	(3.1)F	(3.1)F	(3.0)F	3.3	(3.3)FH	(3.2)SF	3.7	3.7	3.3	3.3	(3.3)H	3.5	3.4	3.4	3.6	3.6	3.4	3.3F	3.3	3.2F	(3.0)S	S
Median	(3.1)	(3.1)	(3.1)	(3.1)	3.2	3.2	(3.3)	3.4	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.4	3.3	3.4	3.2	3.1	3.1
Count	24	24	27	27	28	28	31	27	31	31	30	31	30	31	31	31	31	31	31	30	30	25	24	24

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

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TABLE 59

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F1 (Characteristic), ____ (Unit), January (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC. E.J.W., J.W.P.

Calculated by: McC. E.J.W., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									G	G	L	L	4.1	L	L	L	G							
2									G	L	A	L	L	L	L	L	G							
3									G	L	L	3.8	L	L	L	A	G							
4									G	G	L	L	L	L	L	L	G							
5									G	L	L	3.8	L	3.9	L	L	L							
6									L	L	3.8	3.9	L	L	3.9	G	G							
7									L	L	L	3.8	(3.8)L	(3.6)L	3.7	L	G							
8									G	G	L	(3.8)L	3.7	L	L	L	G							
9									G	G	L	(3.8)L	L	3.9	L	L	L							
10									G	L	L	3.8	3.9	L	(4.3)L	L	G							
11									L	L	L	4.0H	L	3.8H	L	L	L							
12									L	L	L	3.7	3.8	L	3.7	L	G							
13									L	G	L	L	C	3.9	L	L	L							
14									L	L	L	L	L	L	L	L	G							
15									G	L	L	L	L	3.9	L	L	G							
16									G	L	L	(3.9)L	L	(4.0)L	L	L	L							
17									G	G	L	L	L	L	(4.1)L	L	L							
18									G	L	L	3.9H	3.9	4.2H	4.0	(3.6)H	G							
19									G	G	G	L	4.0	L	L	L	L							
20									G	G	3.8	(3.9)F	(3.8)L	4.1H	L	L	L							
21									G	L	L	A	(3.8)L	(3.9)L	(3.9)P	L	G							
22									G	L	(3.8)L	L	3.7	3.7H	4.0H	L	G							
23									G	L	3.8	L	3.7	3.8	3.8	L	G							
24									4.1	L	3.9H	3.9	L	L	L	L	G							
25									G	L	L	L	3.8	3.9	L	4.2	L							
26									L	L	3.7	3.7	3.7	3.8	L	4.2	4.0							
27									L	L	L	L	3.9H	(4.0)L	L	L	L							
28									G	L	L	4.0	3.9	L	L	L	L							
29									G	L	L	(3.9)L	3.9	4.0	4.1	L	G							
30									G	L	G	L	4.3	4.0	3.8H	L	L							
31									L	(3.6)H	3.9H	L	3.7	4.3	(4.2)H	(3.8)H	L							
Median									–	–	3.8	3.8	3.8	3.9	4.0	-								
Count									1	1	7	16	18	18	12	4	1							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

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Form adopted June 1946

TABLE 60

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

(M1500)E, ______ (Characteristic) (Unit) January, 1954 (Month)

Observed at Washington, D.C.

Lat 38.7° N, Long 77.1° W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC. E.J.W., J.W.P.

Calculated by: McC. E.J.W., J.W.P.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									S	$(4.4)^{F}$	4.5^{H}	4.4^{H}	4.4	4.4	4.4^{H}	$(4.6)^{A}$	S							
2									A	A	A	A	$(4.5)^{A}$	4.5	$(4.5)^{A}$	A	A							
3									S	4.2^{H}	4.4^{H}	4.4	4.4^{H}	A	4.4	4.5	A							
4									S	$(4.2)^{H}$	4.4	4.3	4.4	A	4.4	A	$(4.1)^{H}$							
5									S	3.9	4.1	4.3	4.3	4.1	4.2	4.3	4.3							
6									S	A	A	A	4.3	4.3	4.1	4.0^{H}	4.2							
7									S	4.1	4.2	4.1	4.2	4.3	4.0	$(4.3)^{P}$	A							
8									A	4.4^{H}	4.3	$(4.2)^{P}$	4.4	4.4	4.4	4.4	4.0							
9									A	4.3^{F}	4.2	4.2	$(4.1)^{F}$	4.3	4.3	4.2^{H}	A							
10									S	A	$(4.3)^{P}$	4.3	4.3	4.2	4.3	A	4.0							
11									S	A	$(4.3)^{P}$	4.2	4.2	4.2^{H}	4.3	4.3	S							
12									S	4.3	4.2^{H}	4.3^{H}	A	4.3	4.2^{H}	4.3	4.3							
13									S	A	A	$(4.2)^{A}$	C	$(4.2)^{P}$	4.4	4.3^{H}	$(4.4)^{P}$							
14									S	A	A	A	4.3	4.2	A	4.3	$(4.2)^{P}$							
15									S	A	A	A	4.4^{H}	4.3	4.5^{H}	$(4.4)^{H}$	S							
16									$(4.4)^{P}$	$(4.1)^{H}$	4.2^{H}	$(4.3)^{A}$	4.3	4.3	4.4	B	$(4.4)^{H}$							
17									S	A	A	$(4.4)^{A}$	$(4.4)^{A}$	$(4.4)^{A}$	$(4.5)^{A}$	A	$(4.3)^{A}$							
18									S	4.3	4.3	4.4^{H}	4.1	4.1	4.2	4.1	$(4.2)^{P}$							
19									S	4.3^{H}	$(4.1)^{P}$	4.1	4.1	4.2	4.3	4.3	4.2^{H}							
20									S	4.3	$(4.3)^{H}$	$(4.4)^{H}$	4.4	4.4	4.3^{H}	$(4.0)^{H}$	$(4.1)^{P}$							
21									A	4.3^{F}	4.3	A	A	A	A	A	A							
22									A	A	4.0	4.1	4.0	4.3	4.3	4.1^{H}	3.9							
23									S	A	A	A	A	A	A	A	A							
24									S	3.9	4.1	3.9	4.0	4.1	4.0	4.2	4.1							
25									S	4.4	$(4.4)^{P}$	4.2	A	4.2	A	A	A							
26									A	A	A	A	4.0^{H}	4.0	A	A	A							
27									A	$(4.2)^{A}$	$(4.1)^{A}$	A	A	4.3	A	4.4^{H}	$(4.2)^{A}$							
28									$(4.3)^{S}$	4.0	4.1	4.4	4.1	4.3	4.3	4.4	4.4							
29									4.2^{H}	4.1	4.0	4.2	4.3	4.2	4.4^{H}	4.2^{F}	A							
30									$(4.3)^{A}$	4.0^{H}	4.3	4.3	4.3	4.2	4.2	A	4.0^{H}							
31									F	A	4.2	4.2	4.3	4.3	$(4.2)^{P}$	4.4	F							
Median									–	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.2							
Count									4	19	23	23	25	27	25	21	18							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

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Table 61

Ionospheric Storminess at Washington, D. C.

January 1954

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	3	1			2	1
2	1	1			3	4
3	1	1			2	2
4	2	3			0	0
5	2	2			0	2
6	2	1			2	2
7	2	2			1	1
8	1	3			3	2
9	3	3			2	2
10	2	2			2	2
11	1	2			2	1
12	2	1			2	2
13	1	2			3	2
14	2	2			1	2
15	1	3			2	2
16	3	2			2	2
17	1	2			1	2
18	1	2			2	3
19	2	2			4	3
20	2	2			3	3
21	1	1			3	3
22	1	1			3	2
23	1	2			4	2
24	3	1			2	1
25	3	1			1	2
26	2	2			1	1
27	1	2			1	2
28	3	1			2	0
29	2	2			2	1
30	3	1			1	1
31	2	2			2	2

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D. C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

Table 62

Sudden Ionosphere Disturbances Observed at Washington, D. C.

January 1954

No sudden ionosphere disturbances were observed during the month of January.

Table 63

Sudden Ionosphere Disturbances Reported by Direction Générale des Télécommunications de Suède, as Observed at Enköping, Sweden

1953 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
October 10	1405	1425	Lebanon	
14	0955	1005	Argentina, Austria, Brazil, Bulgaria, Czechoslovakia, Netherlands, Peru, Switzerland, Tangier	Solar flare* 1012

*Time of observation at Wendelstein Observatory, Germany. Flare began before time of observation.

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Table 64a

Radio Propagation Quality Figures
(Including Comparisons with Short-Term and Advance Forecasts)

December 1953

Day	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day quality index	Advance forecasts (J-reports) for whole day; issued in advance by:			Geomagnetic K_{Ch}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-4 days	4-7 days	8-25 days	Half day (1)	(2)
1	6	6	7	6	6	5	7	7	6	7	7		1	1
2	7	6	7	6	6	6	7	7	6	6	6		2	1
3	6	6	7	7	6	5	7	6	7	6	6		2	2
4	6	6	7	6	6	6	7	7	7	7	7		2	2
5	6	6	7	7	6	6	7	7	6	7	7		2	1
6	5	6	7	7	6	5	7	6	7	7	7		1	2
7	6	6	7	6	6	6	7	7	7	7	7		2	1
8	6	6	7	7	6	7	7	6	6	7	7		2	2
9	6	6	6	6	6	5	6	6	6	5	5		1	2
10	6	6	7	6	(4)	5	6	5	6	(4)	(4)	X	1	2
11	6	6	7	6	5	(4)	6	5	6	(4)	(4)	X	3	(4)
12	5	5	6	6	(4)	(4)	5	5	6	(3)	(3)	X	(4)	3
13	5	5	6	6	(4)	(4)	5	5	6	(3)	(3)	X	2	3
14	5	5	6	5	5	(4)	6	5	5	(4)	(4)	X	2	2
15	5	6	7	6	(4)	(4)	6	6	6	5	(4)	X	1	2
16	5	6	7	6	5	5	7	6	6	(4)	(4)	X	2	2
17	6	6	7	6	5	5	7	6	6	(4)	(4)	X	1	2
18	5	6	7	6	6	5	6	6	6	6	5		2	1
19	6	6	6	6	6	6	7	7	6	6	5		1	2
20	6	6	7	6	6	6	7	6	6	5	5		1	2
21	5	6	7	7	5	5	7	6	6	5	5		1	1
22	6	5	7	6	6	6	6	6	6	6	6		2	2
23	5	6	7	6	6	5	7	6	6	6	6		0	2
24	5	6	7	6	5	5	6	6	6	6	5		2	1
25	6	6	7	6	6	6	7	6	6	6	6		1	2
26	6	5	7	7	6	6	7	7	6	6	6		1	2
27	6	6	7	6	6	6	7	7	6	7	7		1	2
28	6	6	7	6	6	6	7	7	6	7	7		2	2
29	6	6	7	6	7	6	7	7	6	7	7		1	3
30	6	5	7	7	6	6	7	7	6	7	7		1	1
31	6	6	6	6	7	6	7	7	6	7	7		2	1
Score:														
Quiet periods				P	19	11	21	14		11	8			
				S	11	18	10	17		14	16			
				U	0	0	0	0		0	0			
				F	1	2	0	0		6	7			
Disturbed periods				P	0	0	0	0		0	0			
				S	0	0	0	0		0	0			
				U	0	0	0	0		0	0			
				F	0	0	0	0		0	0			

Scales:

Q-scale of Radio Propagation Quality
- (1) - useless
- (2) - very poor
- (3) - poor
- (4) - poor to fair
- 5 - fair
- 6 - fair to good
- 7 - good
- 8 - very good
- 9 - excellent

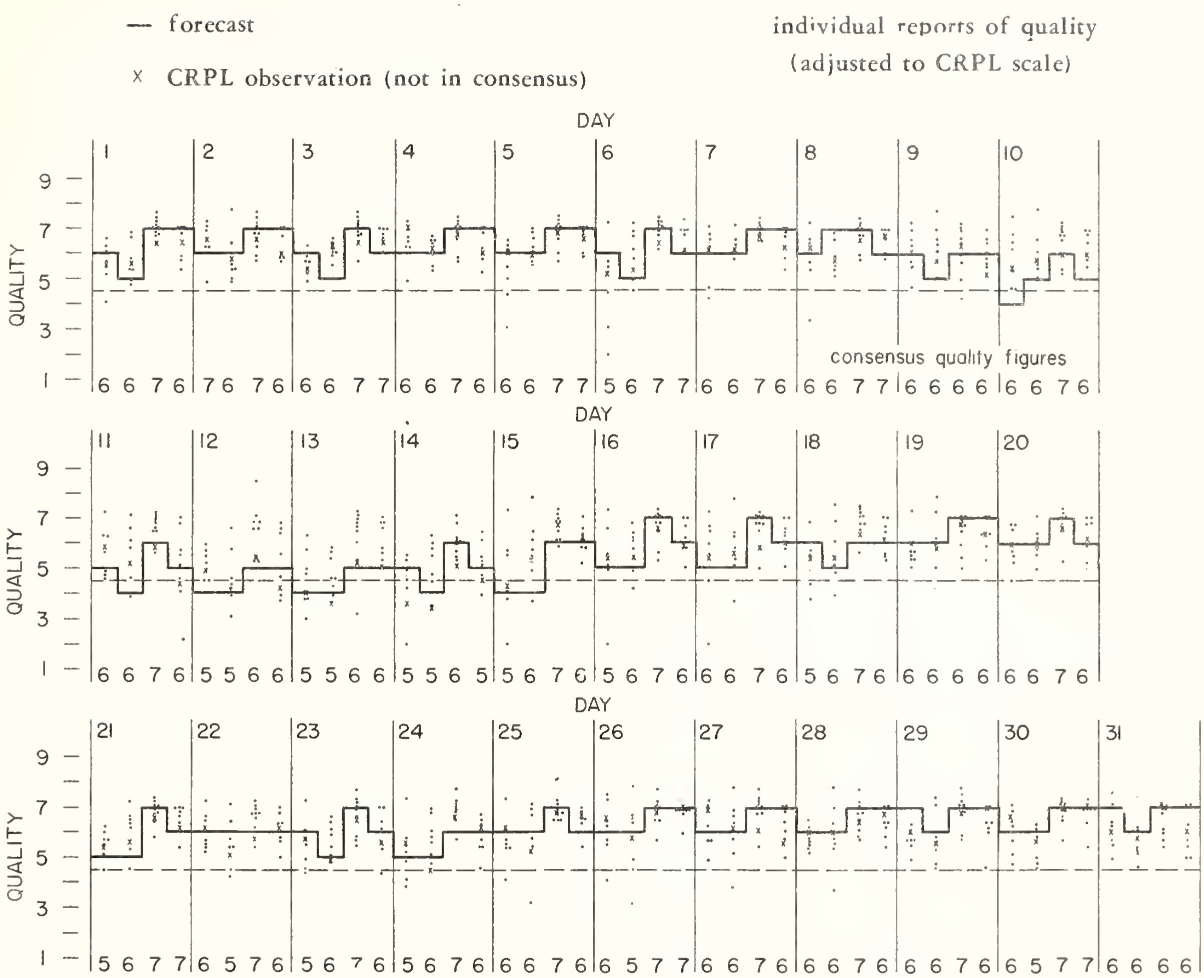
K-scale of Geomagnetic Activity
0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geqslant 4$ indicates significant disturbance, enclosed in ( ) for emphasis

Scoring: (beginning October 1952)
- P - Perfect: forecast quality equal to observed
- S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
- U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were $\geqslant 5$, or both $\leqslant 5$
- F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
- X - probable disturbed date

Table 64b

Short-Term Forecasts---December 1953



Outcome of Advance Forecasts (1 to 4 days ahead) --- December 1953

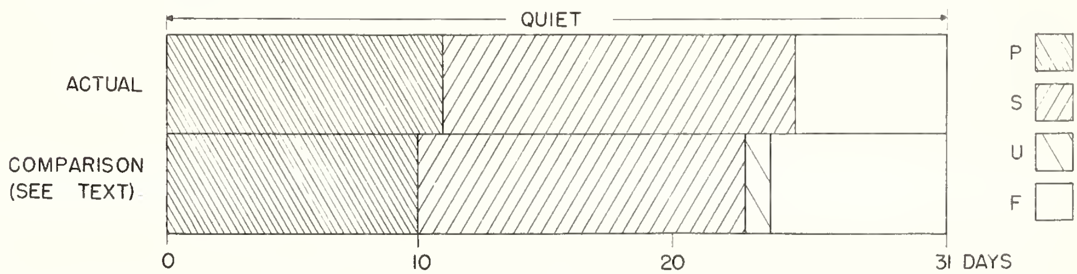


Table 65a

Coronal observations at Climax, Colorado (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-
2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	1	1	2	2	1	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	1	1	1	2	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.9b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.8	-	-	-	-	-	-	2	2	3	3	3	3	3	4	4	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.9	-	-	-	-	-	-	-	1	3	3	3	1	-	-	-	-	-	-	-	-	-	-	-	1	1	2	-	-	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	1	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.8	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
28.9	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 66a

Coronal observations at Climax, Colorado (6374A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	1	1	1	2	1	1	1	1	1	2	1	3	3	4	5	6	6	5	6	6	6	6	6	6	6	4	3	1	1	1	1	1	1	1	2	2	2
2.8	2	1	1	3	2	1	-	-	-	-	1	3	3	2	4	6	5	5	5	5	5	5	4	4	4	3	2	1	1	1	1	1	1	1	1	2	2
3.7a	1	1	2	3	2	1	1	1	1	2	3	3	1	2	4	7	6	6	6	6	6	6	6	6	6	6	4	3	1	1	1	1	2	2	3	3	2
5.7	2	2	1	1	1	1	1	1	1	1	1	2	1	2	4	5	6	7	6	6	6	6	5	3	4	4	5	3	2	1	1	1	1	2	3	4	3
6.7	2	1	1	1	1	1	1	1	1	1	2	2	2	2	3	4	5	6	6	7	8	8	5	5	5	5	5	3	2	1	1	1	2	2	2	2	3
7.7	2	2	1	1	1	1	1	1	1	2	2	2	2	3	5	7	6	6	9	8	8	9	7	6	6	6	6	5	4	2	2	3	4	4	4	4	3
8.9b	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	2	2	2	3	3	3	2	2	2	2	2	1	1	X	X	X	X	-	-	-	-	-
10.8	3	4	4	2	2	3	2	1	1	2	3	3	3	4	3	3	4	4	5	6	8	8	9	6	7	7	8	2	3	2	3	3	3	3	3	3	3
14.9	2	1	1	1	-	-	-	-	-	1	1	1	1	1	1	2	2	2	2	2	3	2	2	2	3	3	2	2	1	1	1	1	1	2	2	2	2
21.9	2	3	3	2	1	1	-	-	-	1	2	4	5	4	4	4	3	2	4	5	5	5	5	4	4	3	3	3	2	1	1	1	1	1	1	3	2
22.7	3	2	2	2	1	1	1	1	1	1	1	3	6	5	5	5	3	3	5	5	7	7	7	6	6	5	5	4	4	3	3	2	1	2	2	2	4
23.7	3	3	2	1	1	-	-	-	-	1	1	2	3	4	3	4	3	2	4	5	5	6	5	3	3	3	3	3	2	2	2	1	1	2	3	3	3
27.8	X	X	X	X	X	X	X	X	X	1	2	1	1	1	1	1	2	2	2	3	3	3	3	3	1	1	1	1	1	1	1	1	2	2	X	X	X
28.9	2	2	1	1	1	1	1	1	1	1	2	3	3	3	4	5	5	4	5	5	6	5	5	3	3	3	3	1	1	1	1	2	2	2	2	2	2
30.9	2	2	1	1	1	1	1	1	1	1	1	2	3	3	2	4	5	5	5	5	4	4	4	5	5	3	2	1	1	1	1	1	1	1	2	2	2
31.7	2	2	2	2	3	2	1	1	1	1	1	2	2	2	2	6	9	5	5	5	4	3	5	5	4	3	3	2	2	2	2	2	2	2	3	3	3

Table 67a

Coronal observations at Climax, Colorado (6702A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.9b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.8	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
30.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

a indicates low weight N90 through S90
b indicates low weight N90 through N20

Table 65b

Coronal observations at Climax, Colorado (5303A), west limb

Date	Degrees south of the solar equator																			Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	1	-	-	1	2	2	1	1	1	1	-	-	-	-	-	-	-	-	-
2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	3	2	-	-	1	2	2	1	1	1	1	-	-	-	-	-	-	-	-	-
3.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	2	1	1	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	1	1	-	-	-	-	-	-	-
8.9c	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
10.8	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.9d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	3	2	1	1	1	1	1	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-
27.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-
30.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	1	1	1	1	2	1	-	-	-	-	-	-	-	-

Table 66b

Coronal observations at Climax, Colorado (6374A), west limb

Date	Degrees south of the solar equator																			Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	2	2	2	2	1	1	1	1	1	2	3	3	3	4	4	5	8	4	3	4	3	1	1	2	4	3	1	1	1	1	1	1	1	1	2	2	1
2.8	2	2	2	1	1	1	1	1	1	3	2	3	2	4	4	4	7	6	6	5	3	2	3	3	5	4	3	1	1	1	1	1	1	1	2	2	2
3.7a	2	2	2	2	2	2	1	1	1	2	3	3	3	3	4	4	3	5	5	4	4	3	3	2	6	5	3	1	1	1	1	1	1	2	2	2	1
5.7	3	3	2	2	2	2	1	1	3	4	5	5	6	6	6	6	7	6	6	5	4	4	4	5	4	3	3	2	1	1	2	2	2	2	1	1	2
6.7	3	3	3	2	2	2	1	2	1	3	4	4	5	5	5	5	4	4	5	4	4	3	4	5	4	2	2	2	2	2	2	2	2	3	3	3	2
7.7	3	3	3	3	2	2	1	1	1	4	4	4	4	5	5	5	4	4	4	4	4	4	4	4	3	3	3	1	1	2	2	2	1	1	2	2	2
8.9	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	2	2
10.8	3	4	4	4	3	2	1	2	1	1	2	3	3	3	5	5	5	5	4	2	3	3	3	4	6	5	4	3	2	2	2	1	2	3	3	3	3
14.9c	2	1	-	-	-	-	-	-	-	-	1	1	1	2	3	3	2	1	3	3	4	4	3	3	2	2	1	1	1	1	1	1	1	1	2	2	2
21.9	2	2	2	3	2	1	1	1	1	2	3	3	4	3	8	9	8	5	5	3	3	4	3	2	1	1	2	1	1	1	1	1	1	2	2	2	2
22.7	4	2	2	2	2	2	1	1	1	3	5	4	4	5	6	6	6	5	4	4	3	2	2	1	1	1	1	1	1	1	1	1	2	2	2	2	3
23.7	3	3	3	3	2	2	1	1	1	1	2	2	2	2	4	5	6	5	4	4	3	2	2	2	1	1	2	1	1	1	1	1	2	2	1	2	3
27.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28.9	2	2	3	2	2	1	1	1	2	2	2	3	4	4	4	4	4	4	4	5	5	3	3	3	3	4	4	3	1	1	1	1	2	2	3	2	2
30.9	2	2	2	2	2	2	1	1	1	1	4	4	4	4	4	4	4	5	5	5	5	4	4	3	3	3	2	2	1	1	1	1	1	2	2	2	2
31.7	3	3	3	3	2	1	1	1	1	2	3	4	6	6	3	4	4	4	5	5	4	4	4	4	4	4	3	2	1	1	1	1	1	1	2	2	2

a indicates low weight S90 through N90.
c indicates low weight N80 through N90.
d indicates low weight S90 through S70.

Table 67b

Coronal observations at Climax, Colorado (6702A), west limb

Date	Degrees south of the solar equator																			Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.9c	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
10.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.9d	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 68a

Coronal observations at Sacramento Peak, New Mexico (5303A), east limb

Date	Degrees north of the solar equator																			Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	-	-	-	-	-	2	2	2	3	2	2	2	2	2	2	3	2	2	2	2	2	3	3	2	2	-	-	3	3	2	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	2	2	2	2	2	3	3	2	2	-	2	3	3	2	2	-	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	2	2	2	2	3	3	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	2	2	3	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	2	3	4	4	4	3	4	3	3	3	2	2	2	3	2	3	3	3	2	2	2	3	-	-	-	-	-	-	-
6.7	-	-	-	-	2	-	2	2	3	3	4	4	3	2	2	-	2	2	2	3	2	2	2	-	2	3	3	3	4	3	2	2	-	-	-	-	-
7.9a	-	-	-	-	-	-	-	2	3	4	4	3	2	3	2	3	2	2	3	3	-	-	-	2	2	3	3	2	2	2	-	-	-	-	-	-	-
10.7a	-	-	-	-	-	-	2	3	2	3	3	4	3	2	5	4	4	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	2	3	5	7	6	5	5	5	4	5	4	3	2	3	-	-	-	-	3	3	2	3	2	3	2	2	-	-	-	-	-	-
16.7	-	-	-	-	-	2	2	3	3	3	2	3	3	2	3	3	4	3	3	3	4	3	2	2	2	-	-	-	-	-	-	-	3	4	3	-	-
21.8a	-	-	-	-	-	2	2	3	3	4	4	3	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.9	-	-	-	-	-	-	2	3	5	5	4	4	3	2	2	2	2	3	2	-	-	-	-	-	-	2	3	2	2	2	-	-	-	-	-	-	-
23.7	-	-	-	-	-	2	3	4	5	4	5	5	4	2	2	2	2	2	2	3	2	2	-	-	2	3	3	3	3	3	2	-	-	-	-	-	-
26.7	-	-	-	-	-	-	2	2	3	3	3	2	3	3	2	3	3	3	2	2	3	2	2	2	3	4	4	5	5	4	3	3	2	2	-	-	-
31.7	-	-	-	-	-	-	-	-	2	2	3	3	2	2	-	-	3	3	3	2	2	2	2	2	2	2	2	3	4	3	2	2	-	-	-	-	-

Table 69a

Coronal observations at Sacramento Peak, New Mexico (6374A), east limb

Date	Degrees north of the solar equator																			Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	3	2	2	2	2	-	2	2	-	3	3	4	5	4	5	10	8	9	8	7	8	8	7	7	6	5	5	5	3	2	-	-	-	-	2	-	2
2.7	2	2	3	2	3	2	-	2	3	2	3	4	5	3	4	13	11	10	11	11	14	11	8	7	5	6	5	3	3	2	2	-	2	-	2	3	3
3.8	2	3	3	2	3	3	2	3	2	2	3	5	5	6	7	12	12	11	10	8	13	10	8	5	5	6	7	4	3	2	-	2	2	2	3	4	2
4.7	2	-	3	2	3	2	3	4	2	2	2	3	4	3	7	8	11	10	9	8	9	5	6	5	5	4	4	2	-	-	2	2	-	3	2	3	3
5.7	4	3	3	3	3	3	2	2	2	2	3	2	3	3	5	8	11	14	13	13	12	11	10	8	5	6	6	5	2	-	2	-	2	3	3	3	2
6.7	5	4	3	3	3	5	4	3	2	3	3	5	6	7	8	11	11	14	13	14	15	14	13	10	10	9	9	7	3	4	2	2	3	3	3	4	3
7.9a	5	4	3	3	3	4	3	3	2	3	5	5	4	4	6	8	11	12	11	11	12	14	15	11	12	12	8	7	5	5	4	2	2	3	3	3	2
10.7a	3	2	-	2	2	2	2	2	-	2	2	2	2	2	2	3	3	3	4	5	6	7	8	6	5	4	5	4	2	-	2	2	-	-	-	-	-
11.7	4	3	4	4	5	4	3	2	4	-	2	3	5	4	5	5	6	7	8	11	12	14	15	13	12	8	6	5	2	2	3	2	2	2	3	3	3
16.7	3	3	3	2	2	3	3	3	3	3	3	4	5	8	6	11	12	14	13	13	12	10	8	8	7	5	5	4	3	2	2	2	3	3	2	3	2
21.8a	-	-	-	-	2	3	-	-	-	-	-	-	4	3	5	5	6	7	3	3	3	2	3	3	2	3	2	2	2	2	3	-	-	-	-	-	-
22.9	3	5	4	4	4	3	2	2	2	3	3	4	5	7	8	8	11	8	7	8	10	12	13	13	9	7	5	5	4	4	3	3	2	2	3	3	2
23.7	5	4	4	3	3	3	2	2	3	3	2	4	8	16	15	13	12	11	8	9	16	14	14	13	11	8	5	4	4	4	3	2	2	3	3	2	3
26.7	4	2	3	3	3	5	3	2	-	3	4	8	9	7	3	5	6	8	9	10	10	11	8	5	11	8	4	4	3	-	2	2	-	2	3	3	4
31.7	2	2	2	-	2	2	3	-	-	-	2	3	3	4	8	11	16	11	10	8	6	5	5	6	8	9	3	3	2	-	-	3	2	2	3	2	2

Table 70a

Coronal observations at Sacramento Peak, New Mexico (6702A), east limb

Date	Degrees north of the solar equator																			Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 68b

Coronal observations at Sacramento Peak, New Mexico (5303A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	-	-	-	-	-	-	-	-	2	2	3	2	3	3	2	3	3	3	4	3	2	2	2	3	3	2	3	3	3	2	3	3	2	-	-	-	-
2.7a	-	-	-	-	-	-	2	3	3	3	2	3	3	2	3	2	3	7	6	2	2	3	2	3	3	3	2	3	2	3	3	2	2	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4	5	4	3	3	3	3	3	3	2	2	2	3	3	3	3	2	2	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	2	3	2	2	2	2	3	2	2	2	3	2	3	3	3	3	2	-	-	-
5.7	-	-	-	-	-	3	2	2	3	2	2	3	2	3	3	2	3	3	2	4	4	4	5	8	4	5	6	5	6	5	3	2	2	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	2	3	2	3	2	2	2	3	2	2	3	3	4	5	5	4	4	4	5	5	6	5	4	2	-	-	-	-
7.9 a	-	-	-	-	-	-	-	-	2	3	3	2	2	2	2	2	3	2	3	2	2	2	2	3	2	2	2	3	5	4	5	3	-	-	-	-	-
10.7 a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	2	2	3	2	3	2	2	3	2	2	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	2	3	3	4	5	4	3	3	3	2	3	2	3	3	3	4	3	2	2	2	-	-	3	2	2	2	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	3	2	3	2	3	3	2	3	3	2	2	2	3	3	3	2	2	2	2	3	2	2	3	3	2	-	-	-	-
21.8 a	-	-	-	-	-	-	-	-	-	2	2	3	2	2	3	2	-	-	-	-	-	-	-	-	2	3	3	4	4	3	2	-	-	-	-	-	-
22.9	-	-	-	-	-	-	-	-	2	3	3	3	3	2	2	2	2	2	3	3	3	3	4	4	5	4	4	5	5	5	4	3	2	-	-	-	-
23.7	-	-	-	-	-	-	-	2	2	3	3	3	2	3	2	2	2	2	3	4	5	5	5	6	7	5	6	6	7	7	5	3	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	2	2	3	3	2	3	4	3	3	2	2	2	3	3	2	3	3	4	5	6	5	4	3	2	3	2	-	-
31.7	-	-	-	-	-	-	2	2	2	2	2	2	2	3	3	3	4	3	3	2	3	3	4	3	2	2	2	3	5	4	3	2	-	-	-	-	-

Table 69b

Coronal observations at Sacramento Peak, New Mexico (6374A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	2	2	2	2	2	-	-	2	-	2	2	3	3	3	3	3	5	6	4	3	4	3	2	2	3	5	4	2	3	2	-	2	2	2	2	2	3
2.7a	3	3	2	2	-	-	2	2	2	3	2	2	3	2	5	5	4	8	8	7	7	6	4	3	5	5	8	3	3	3	2	-	2	2	-	2	2
3.8	2	-	-	2	2	-	2	2	3	2	3	3	4	5	8	7	6	5	6	5	5	3	4	6	8	11	10	5	3	2	2	2	2	2	3	2	2
4.7	3	-	-	-	2	2	-	-	2	3	-	3	4	3	5	8	7	5	6	6	7	5	3	5	4	5	4	3	2	2	3	2	2	3	2	2	2
5.7	2	3	3	2	3	3	3	4	2	2	3	3	8	8	9	11	10	11	13	11	7	5	5	8	7	5	4	3	2	2	2	2	3	3	2	3	4
6.7	3	3	2	2	3	3	3	3	3	2	3	4	10	11	11	13	12	11	10	8	7	5	6	10	11	8	5	5	4	2	3	3	3	4	3	4	5
7.9a	2	3	3	2	3	2	2	2	2	3	5	4	5	10	11	9	8	6	5	5	6	5	11	8	6	5	4	3	-	2	3	3	3	2	3	4	5
10.7a	-	-	-	-	-	-	-	-	-	-	2	2	2	3	4	5	4	2	3	-	2	2	3	3	3	5	4	3	2	2	-	2	2	2	2	2	3
11.7	3	2	3	2	3	2	-	-	2	-	2	3	7	8	6	5	6	5	4	4	3	3	4	3	5	8	8	5	3	2	3	3	2	2	3	3	4
16.7	2	2	3	3	2	3	3	-	2	3	3	3	4	8	7	8	7	7	6	5	6	7	7	7	6	5	5	4	3	-	3	2	3	3	-	2	3
21.8a	-	-	-	-	-	-	-	2	2	2	-	3	2	6	7	8	7	6	5	4	3	2	2	2	-	-	-	3	-	2	-	-	-	-	-	-	-
22.9	2	3	2	2	3	2	2	2	2	-	3	3	4	4	10	9	8	7	7	5	5	3	2	3	2	2	2	2	3	2	-	-	2	3	3	2	3
23.7	3	4	3	3	2	3	2	3	3	5	5	6	5	10	14	15	15	14	11	10	8	6	4	6	5	4	5	6	4	2	2	2	3	4	4	4	5
26.7	4	2	3	4	-	-	2	3	3	3	5	8	9	7	6	8	8	9	8	8	5	4	3	4	3	6	5	3	2	-	-	-	2	3	3	3	4
31.7	2	3	2	2	2	-	2	-	-	2	3	4	6	8	7	7	8	10	11	10	10	7	6	8	7	7	4	3	2	3	2	-	3	2	-	3	2

Table 70b

Coronal observations at Sacramento Peak, New Mexico (6702A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Jan. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 71

Zürich Provisional Relative Sunspot Numbers

January 1954

Date	R_Z*	Date	R_Z*
1	0	17	0
2	0	18	0
3	0	19	0
4	0	20	0
5	0	21	0
6	0	22	0
7	0	23	0
8	0	24	0
9	0	25	0
10	0	26	0
11	0	27	0
12	0	28	0
13	0	29	0
14	0	30	0
15	0	31	0
16	0	Mean:	0.0

*Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Table 72

American Relative Sunspot Numbers

December 1953

Date	R_A'	Date	R_A'
1	0	17	0
2	0	18	0
3	0	19	0
4	0	20	0
5	0	21	1
6	4	22	0
7	6	23	0
8	1	24	3
9	0	25	7
10	0	26	3
11	0	27	1
12	0	28	15
13	0	29	9
14	0	30	0
15	0	31	0
16	0	Mean:	1.6

Table 73

Solar Flares, January 1954

No solar flares were reported for the month of January.

Table 74

Indices of Geomagnetic Activity for December 1953

Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1953	C	Values Kp three-hour interval 1 2 3 4	5 6 7 8	Sum	Final Selected Days
1	0.0	0+ 1- 1- 0+	0+ 0+ 1- 1-	4o	Five
2	0.1	1+ 1- 2o 1-	0+ 1- 1o 0+	7o	Quiet
3	0.2	2- 2- 1- 1+	1+ 1o 1o 2o	11-	
4	0.4	4o 2- 2- 1+	1- 1o 2o 2o	14+	1
5	0.2	3- 2o 1o 1o	0+ 1+ 1o 0o	9+	2
					23
6	0.3	1+ 0+ 1- 1o	3- 2+ 2- 2o	12o	30
7	0.3	3o 2o 1+ 2-	0+ 0+ 0+ 2o	11o	31
8	0.3	1- 2- 2- 1o	1+ 2o 2o 3-	13o	
9	0.4	3+ 1- 1- 1-	1o 2o 3+ 2-	13+	
10	0.2	1+ 0o 1+ 2o	1o 2o 0+ 2-	10-	
11	1.2	2o 4o 3- 4+	5o 4- 4- 4+	30-	Five
12	1.0	4+ 3+ 4o 2o	3+ 4- 3- 4-	27o	Disturbed
13	0.5	2+ 3- 2- 2-	2o 1+ 4- 2+	18-	
14	0.2	1o 1+ 2- 1+	1+ 1+ 2o 1+	11+	4
15	0.3	0+ 1o 1+ 2o	1o 1- 3o 2+	12-	11
					12
16	0.2	2- 1- 2o 2o	1- 1o 1- 2-	10+	13
17	0.3	2- 2- 1o 1o	1+ 2o 1o 3o	13-	27
18	0.3	3o 0+ 1o 1o	2- 2- 2- 2-	12o	
19	0.2	1o 0+ 2- 1-	1o 2o 2o 2-	10+	
20	0.3	1o 1+ 1+ 0+	1+ 3- 2o 1+	11+	
21	0.2	2o 1+ 1o 1-	1- 0+ 0+ 3-	9o	Ten
22	0.5	2- 3- 2+ 1+	2- 2+ 3o 1+	16+	Quiet
23	0.2	1- 0+ 1- 0+	2- 1+ 2+ 2-	9o	
24	0.2	2+ 2+ 2+ 2-	0+ 0o 1o 1o	11o	1
25	0.3	1+ 1o 2o 1o	1o 2o 1+ 3o	13-	2
					3
26	0.2	1+ 0+ 0o 1o	1o 1+ 2- 3-	9+	10
27	0.4	1+ 1o 2- 2-	2- 2- 2o 4-	15-	16
28	0.4	3o 2o 1o 2-	2+ 2o 2- 1+	15o	19
29	0.4	3- 1- 1o 1+	2o 3- 2- 3o	15o	21
30	0.2	1o 2- 1+ 1+	1+ 1o 1+ 1+	10+	23
31	0.1	1- 1o 2o 2-	0+ 0+ 0+ 1-	7o	30
					31
Mean:	0.32				

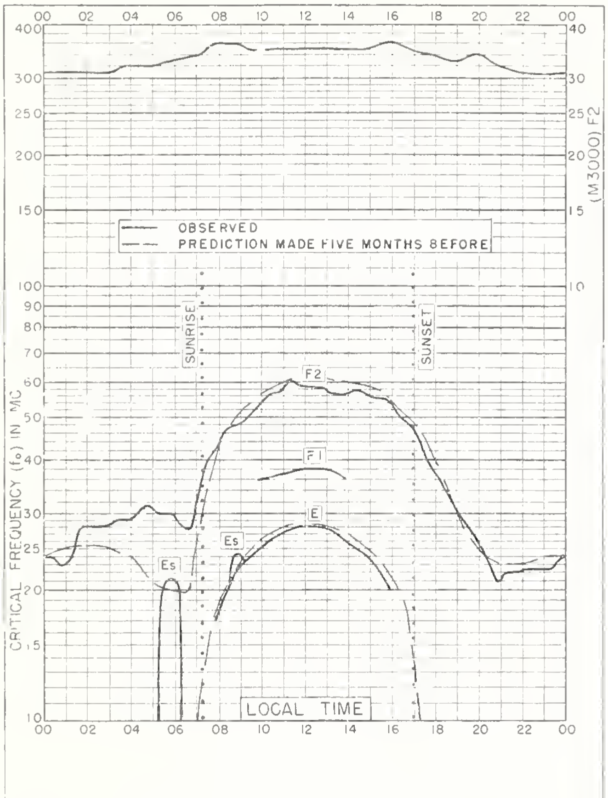


Fig. 1. WASHINGTON, D.C. 38.7°N, 77.1°W JANUARY 1954

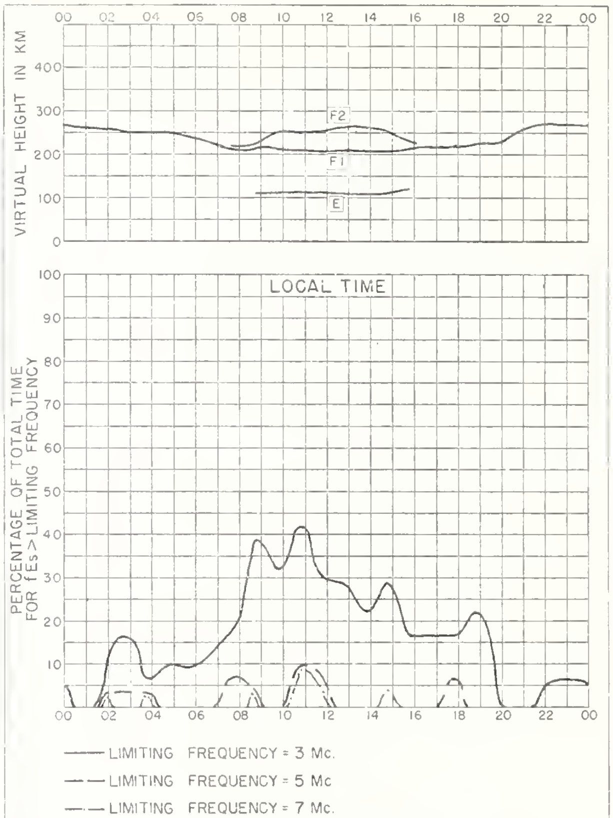


Fig. 2. WASHINGTON, D.C. JANUARY 1954

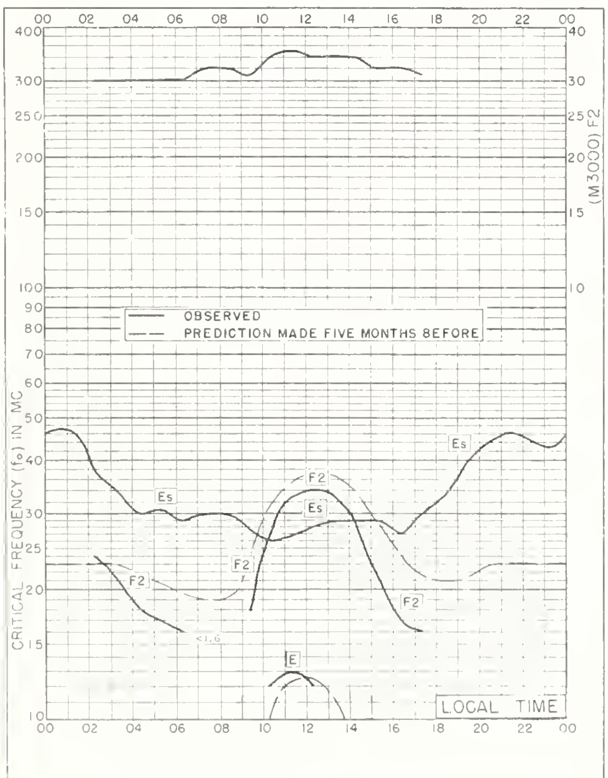


Fig 3. TROMSO, NORWAY 69.7°N, 19.0°E DECEMBER 1953

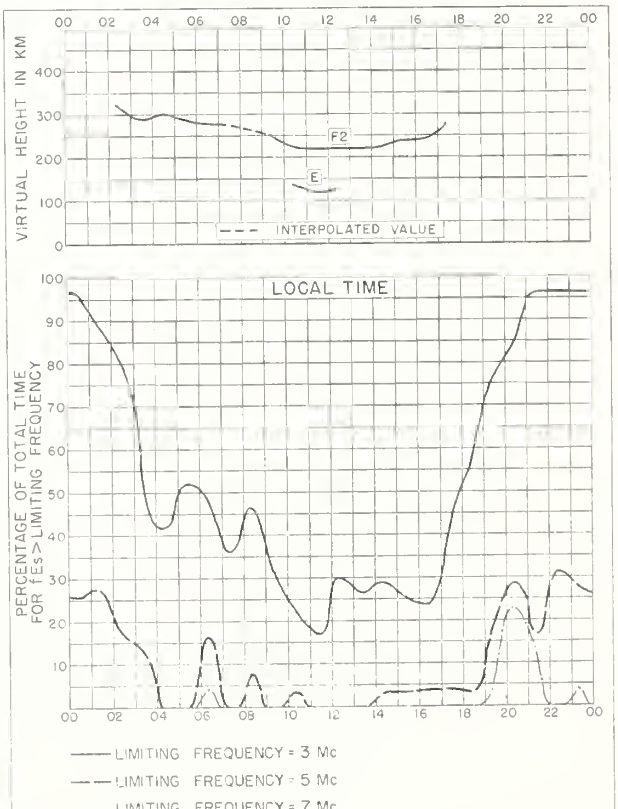


Fig 4. TROMSO, NORWAY DECEMBER 1953

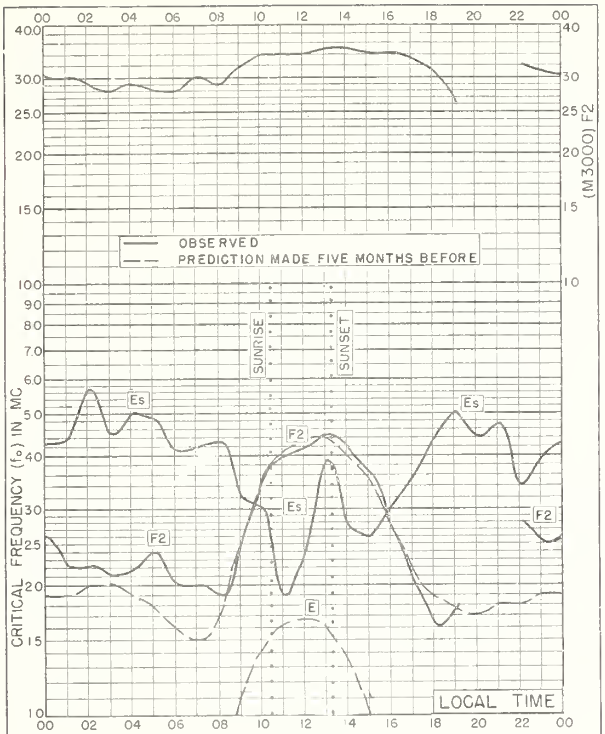
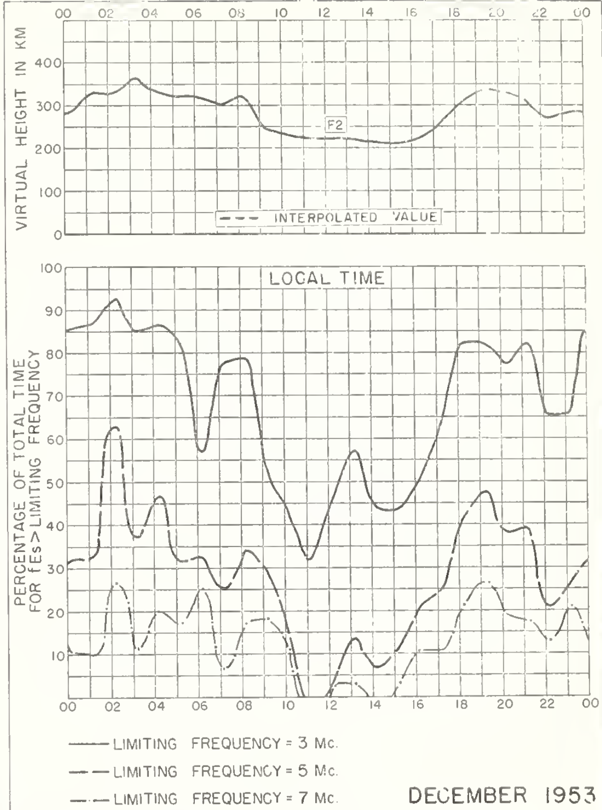


Fig. 5. FAIRBANKS, ALASKA
64.9° N, 147.8° W DECEMBER 1953



DECEMBER 1953
Fig. 6. FAIRBANKS, ALASKA

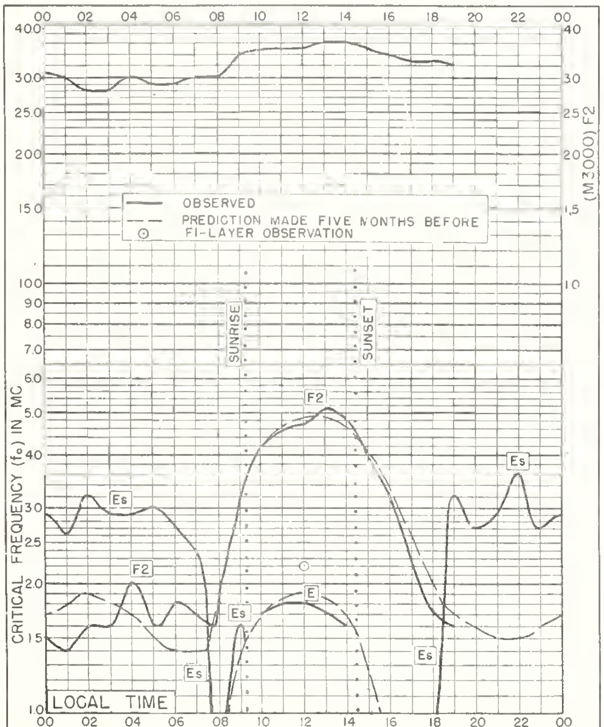
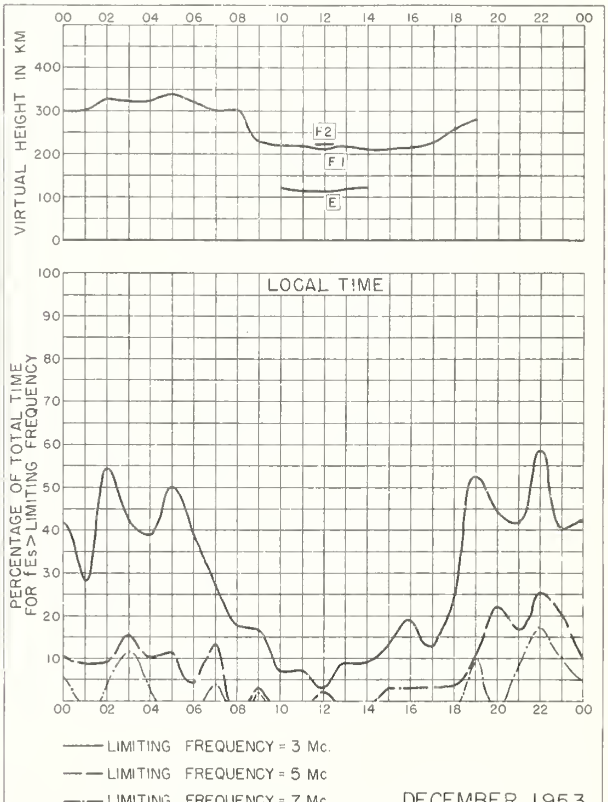


Fig. 7. ANCHORAGE, ALASKA
61.2°N, 149.9°W DECEMBER 1953



DECEMBER 1953
Fig. 8. ANCHORAGE, ALASKA

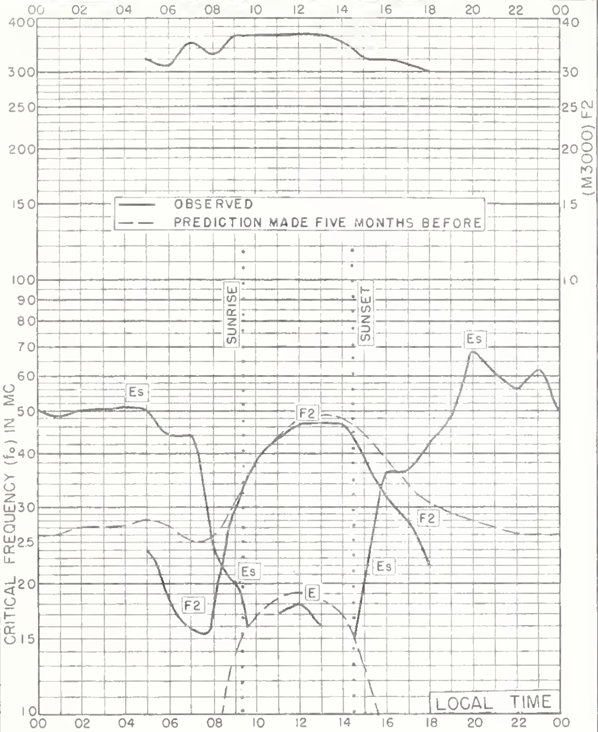
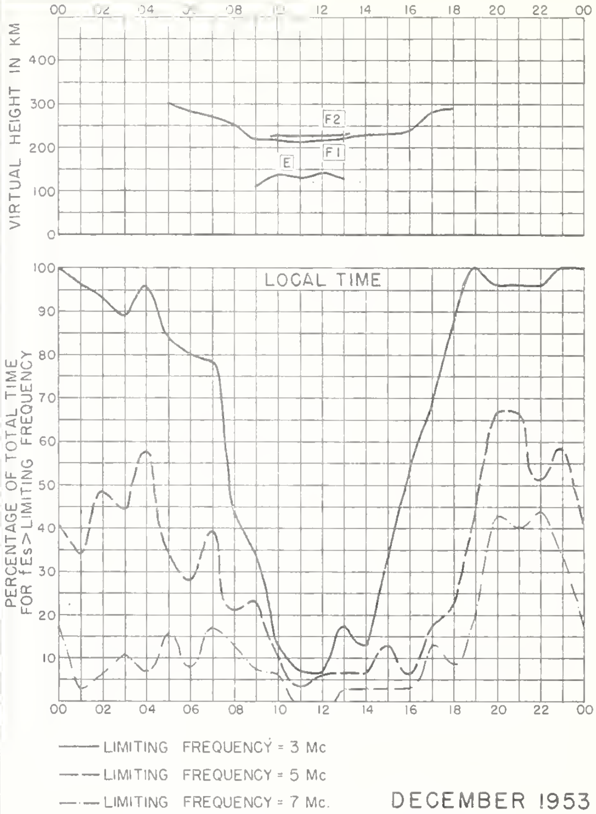


Fig. 9 NARSARSSUAK, GREENLAND
61.2°N 45.4°W DECEMBER 1953



DECEMBER 1953
Fig. 10. NARSARSSUAK, GREENLAND

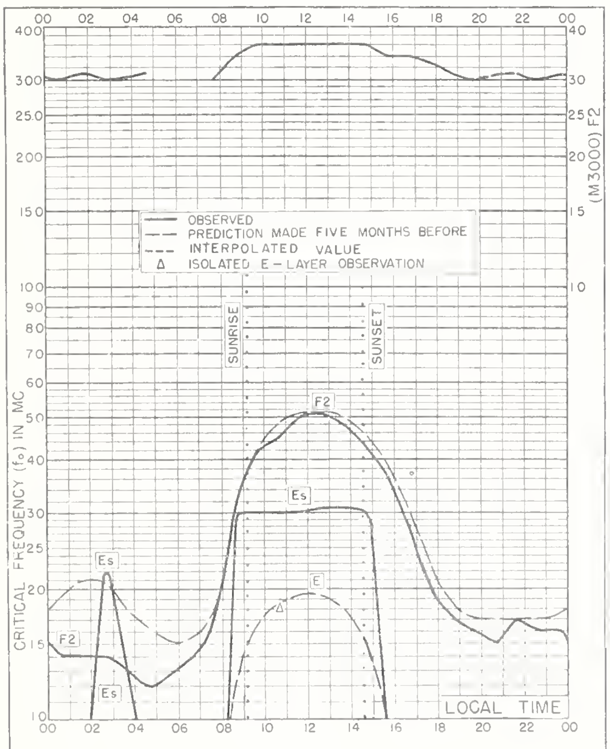


Fig. 11. OSLO, NORWAY
60.0°N, 11.1°E DECEMBER 1953

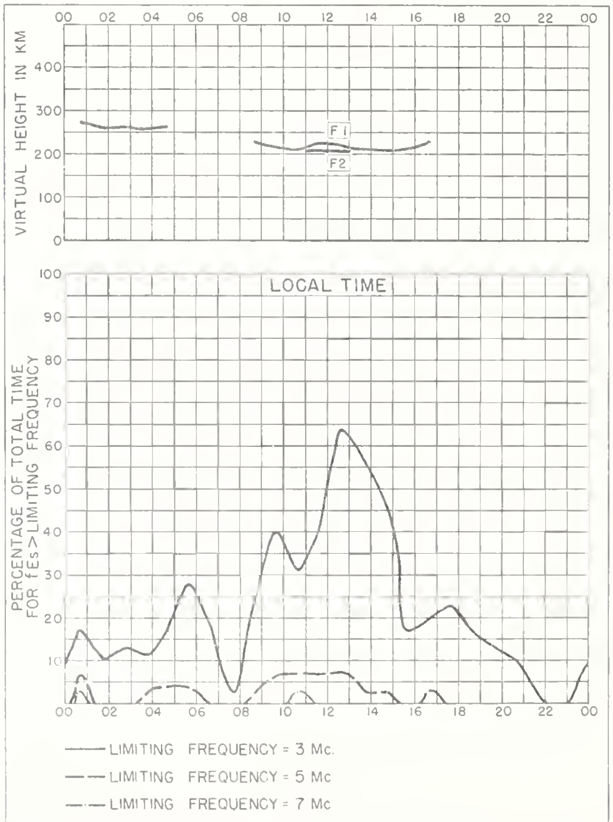


Fig. 12. OSLO, NORWAY DECEMBER 1953

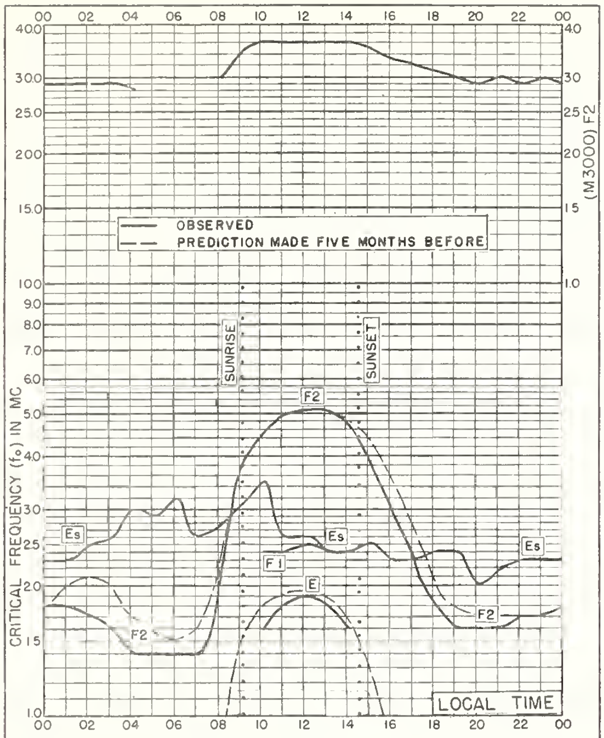


Fig. 13. UPSALA, SWEDEN
59.8°N, 17.6°E DECEMBER 1953

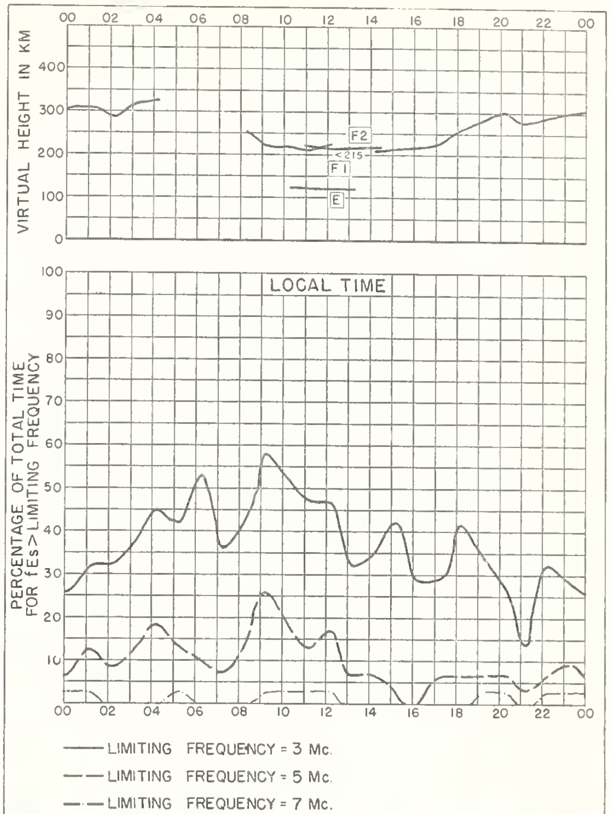


Fig. 14. UPSALA, SWEDEN DECEMBER 1953

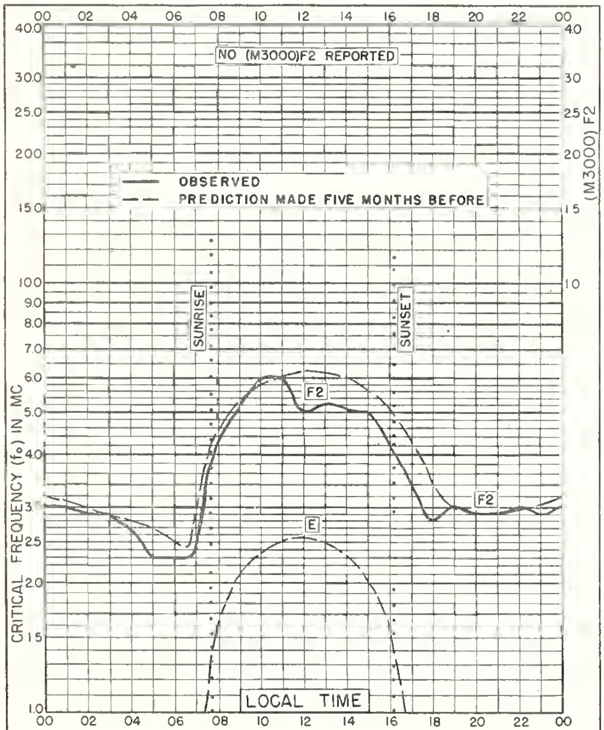


Fig. 15. GRAZ, AUSTRIA
47.1°N, 15.5°E DECEMBER 1953

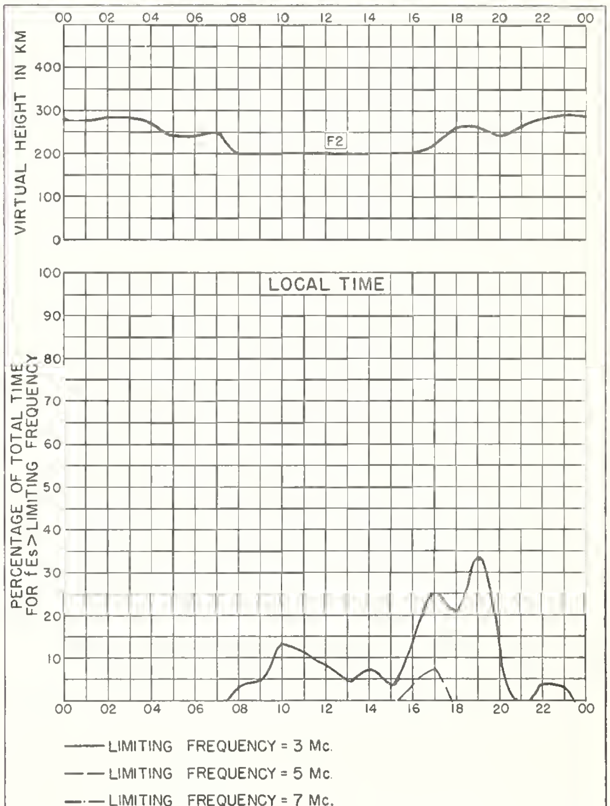


Fig. 16. GRAZ, AUSTRIA DECEMBER 1953

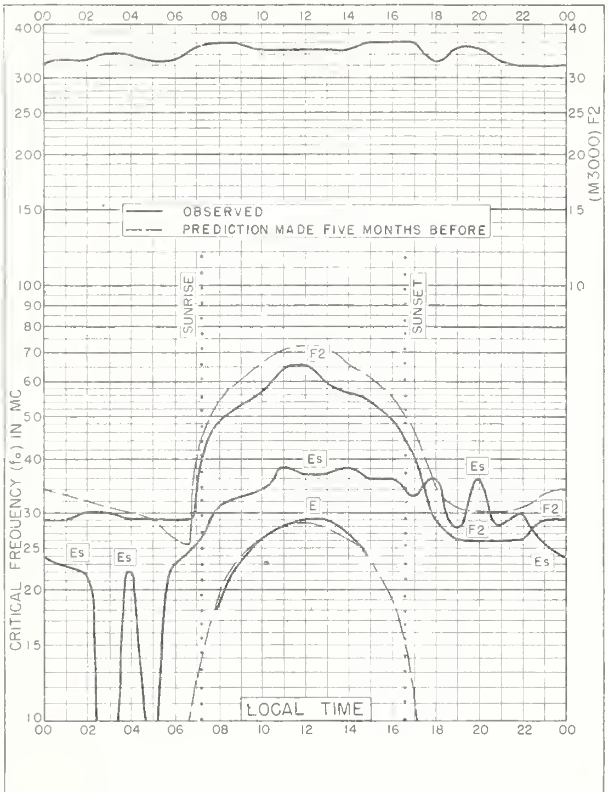
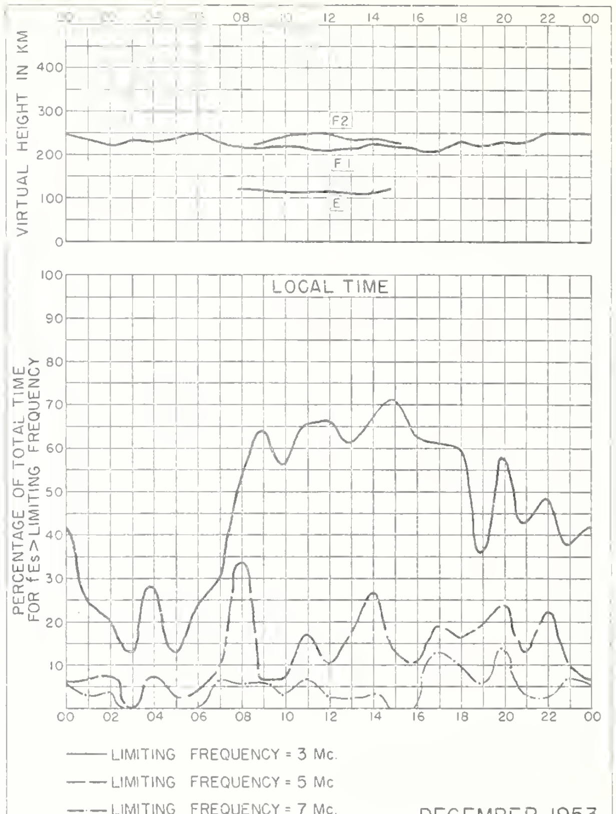


Fig. 17. SAN FRANCISCO, CALIFORNIA
37.4° N, 122.2° W DECEMBER 1953



DECEMBER 1953
Fig 18. SAN FRANCISCO, CALIFORNIA

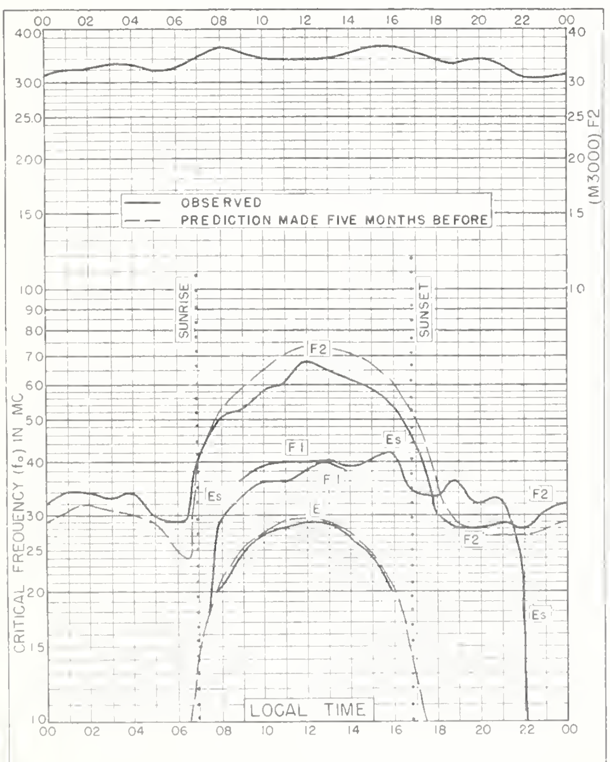
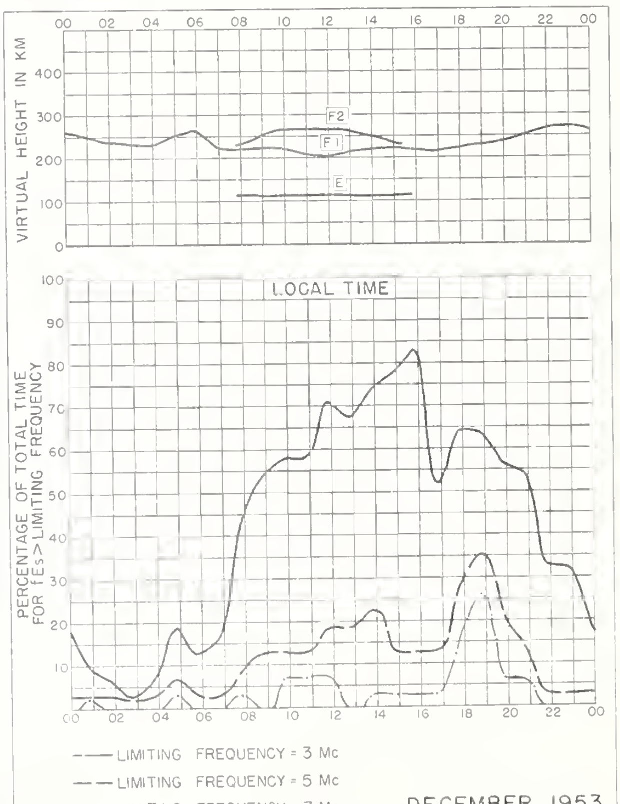


Fig. 19. WHITE SANDS, NEW MEXICO
32.3° N, 106.5° W DECEMBER 1953



DECEMBER 1953
Fig. 20. WHITE SANDS, NEW MEXICO

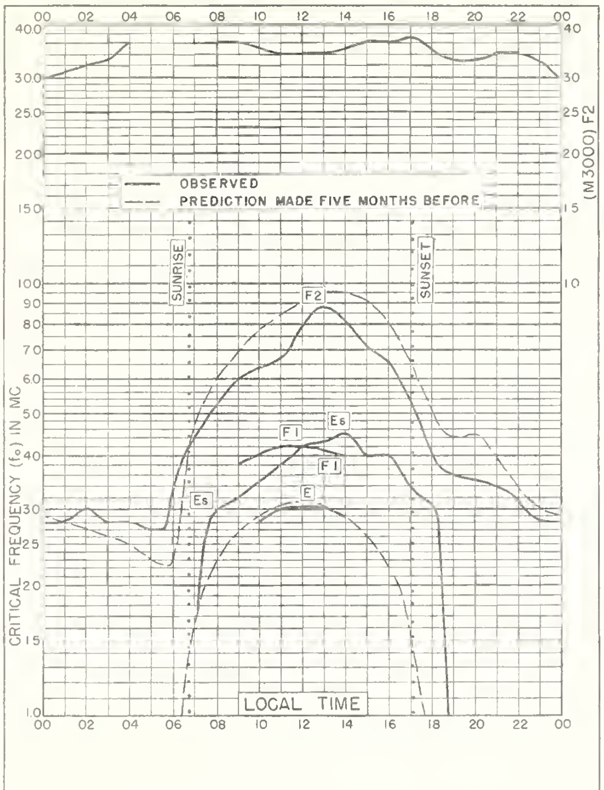


Fig. 21. OKINAWA I.
26.3°N, 127.8°E DECEMBER 1953

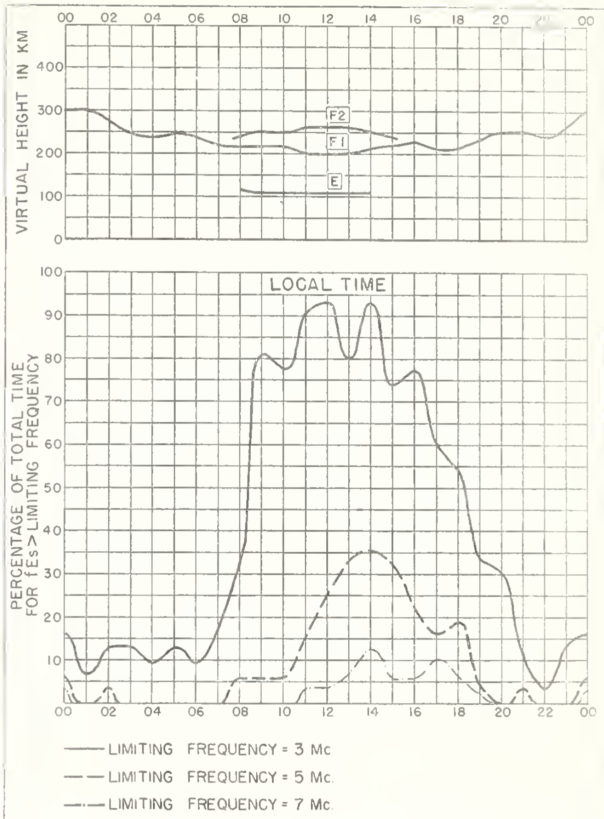


Fig. 22. OKINAWA I DECEMBER 1953

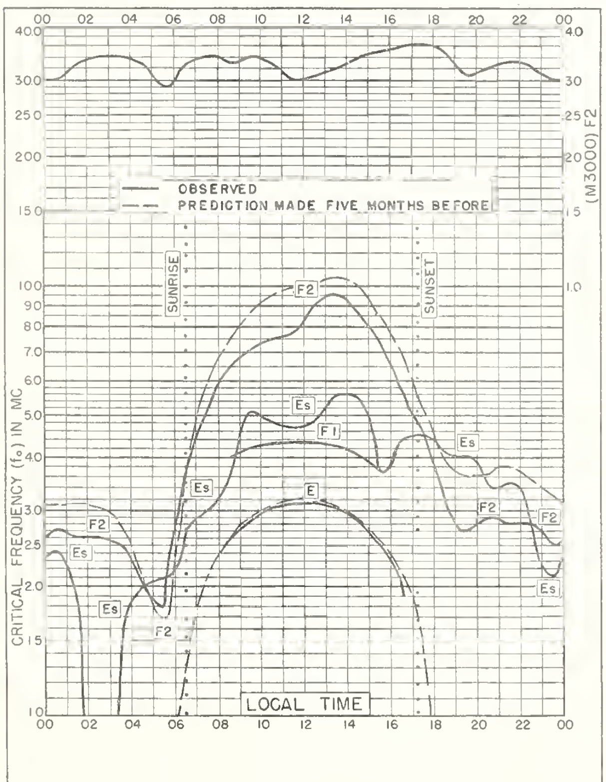


Fig. 23. MAUI, HAWAII
20.8°N, 156.5°W DECEMBER 1953

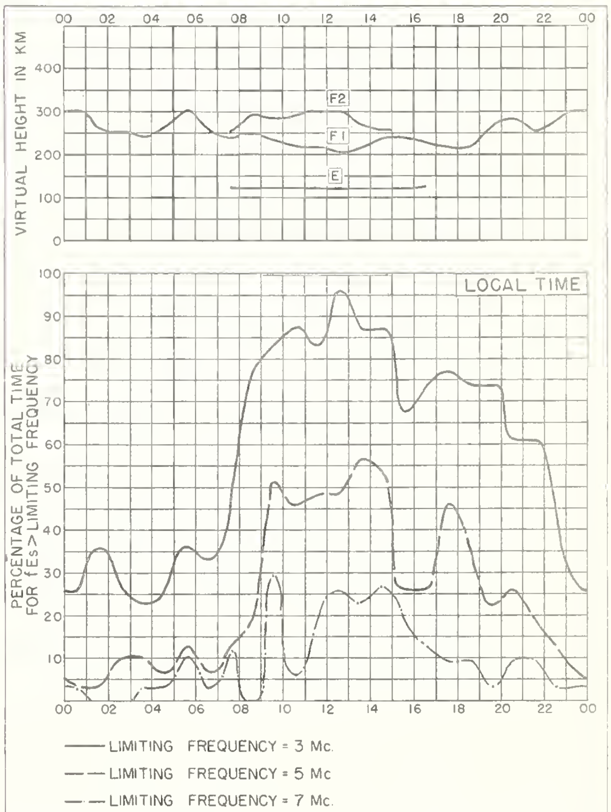


Fig. 24. MAUI, HAWAII DECEMBER 1953

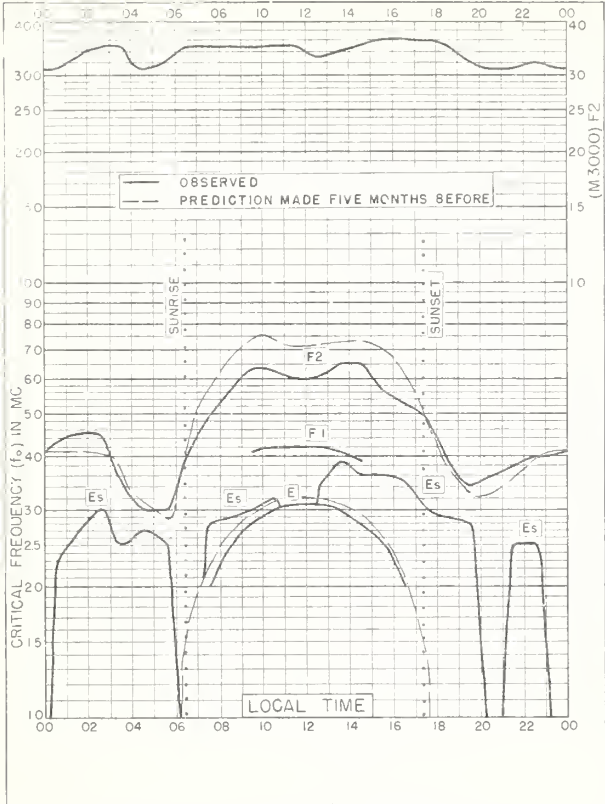


Fig. 25. PUERTO RICO, W. I.
18.5°N, 67.2°W DECEMBER 1953

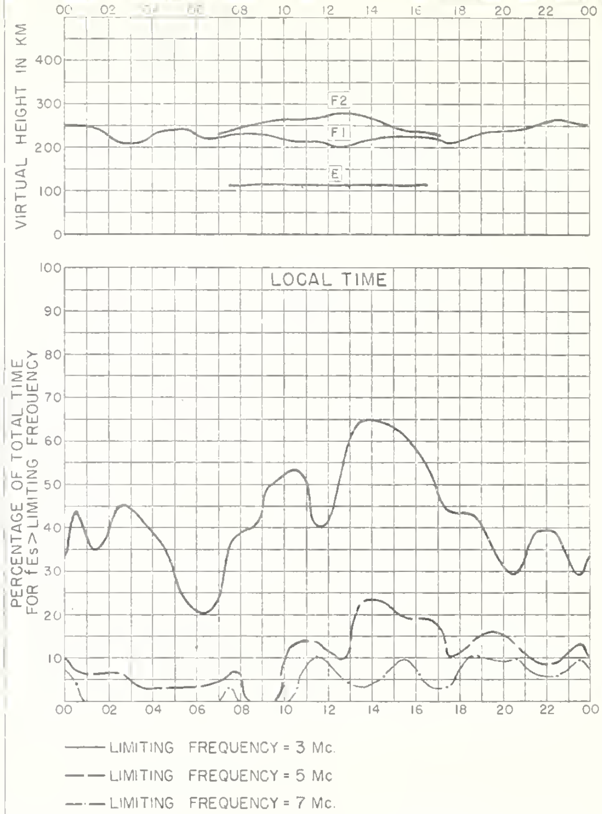


Fig. 26. PUERTO RICO, W. I. DECEMBER 1953

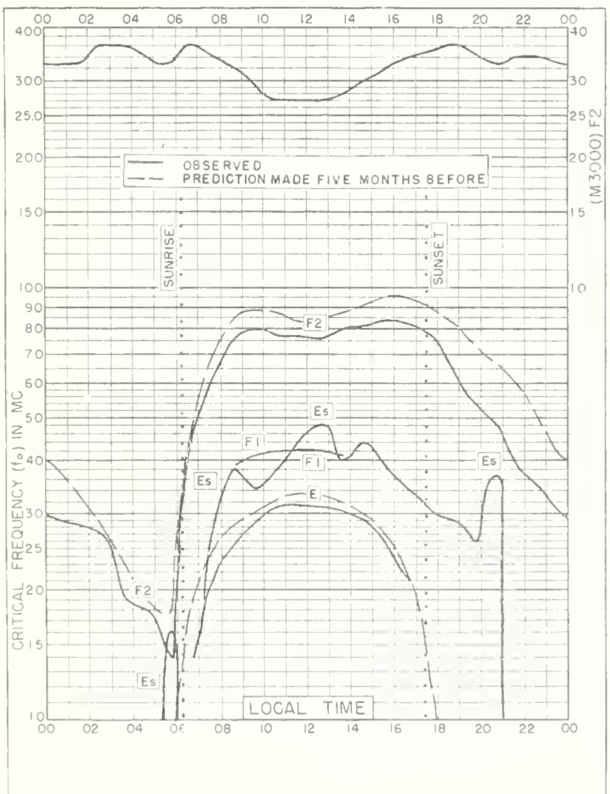


Fig. 27. GUAM I.
13.6°N, 144.9°E DECEMBER 1953

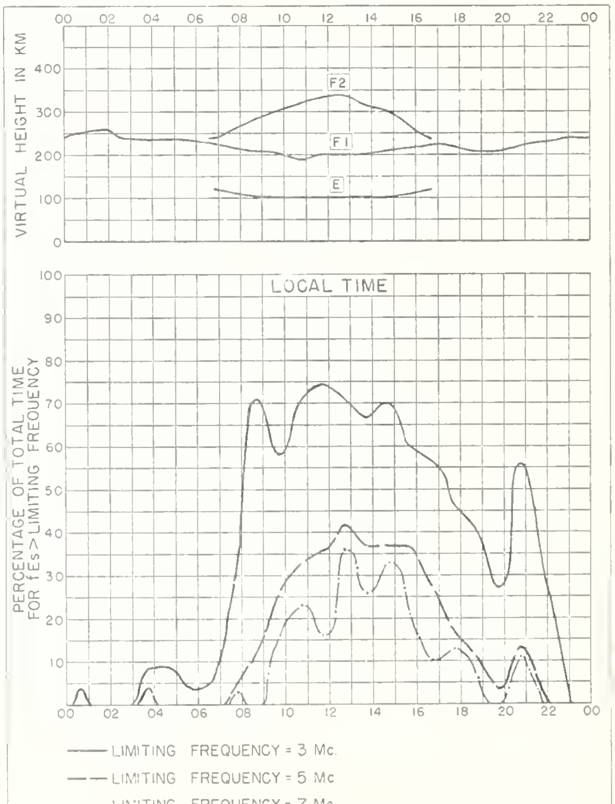


Fig 28. GUAM I. DECEMBER 1953

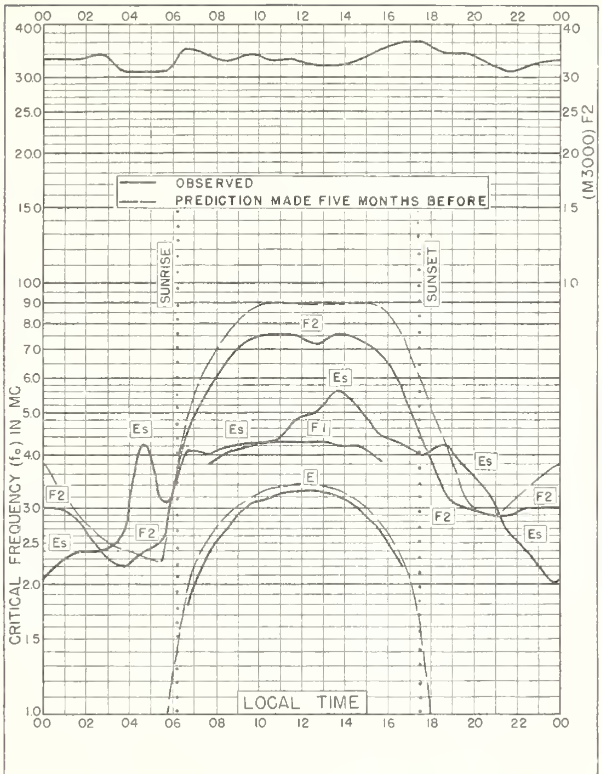


Fig. 29. PANAMA CANAL ZONE
9.4°N, 79.9°W DECEMBER 1953

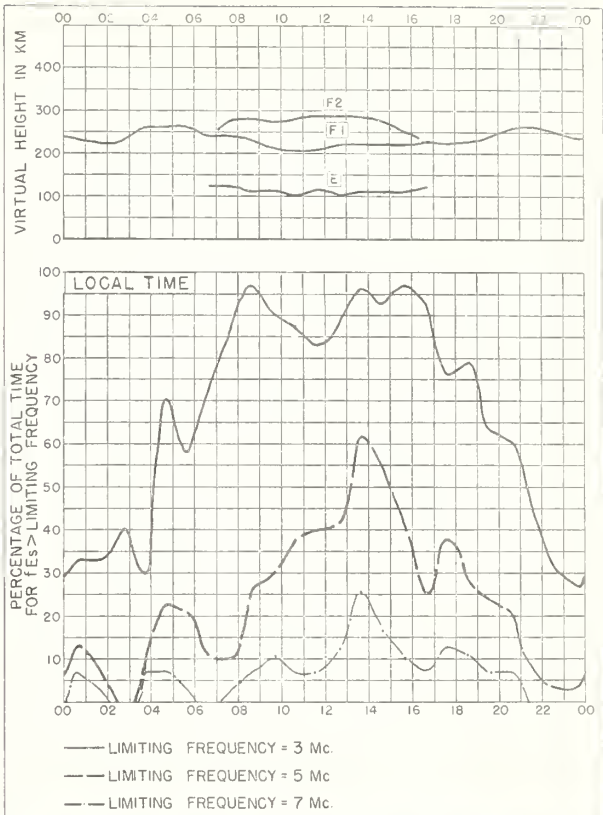


Fig. 30. PANAMA CANAL ZONE DECEMBER 1953

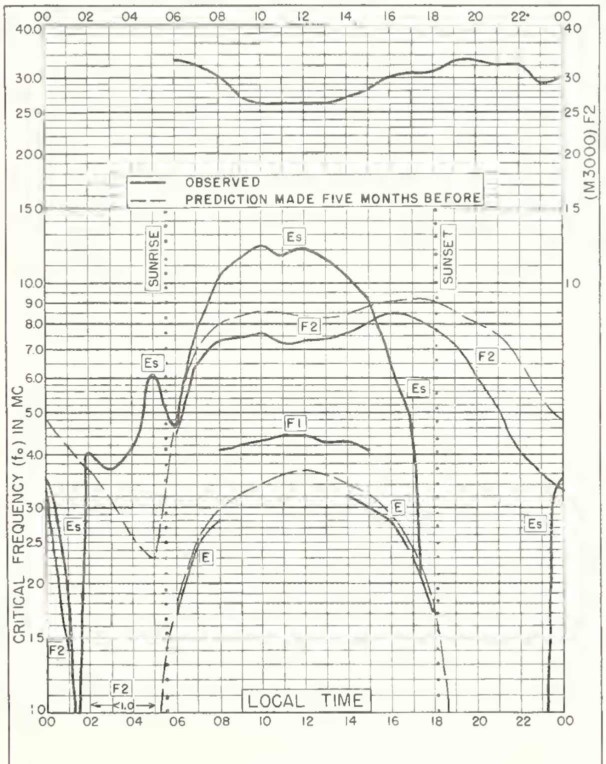


Fig. 31. HUANCAYO, PERU
12.0° S 75.3° W DECEMBER 1953

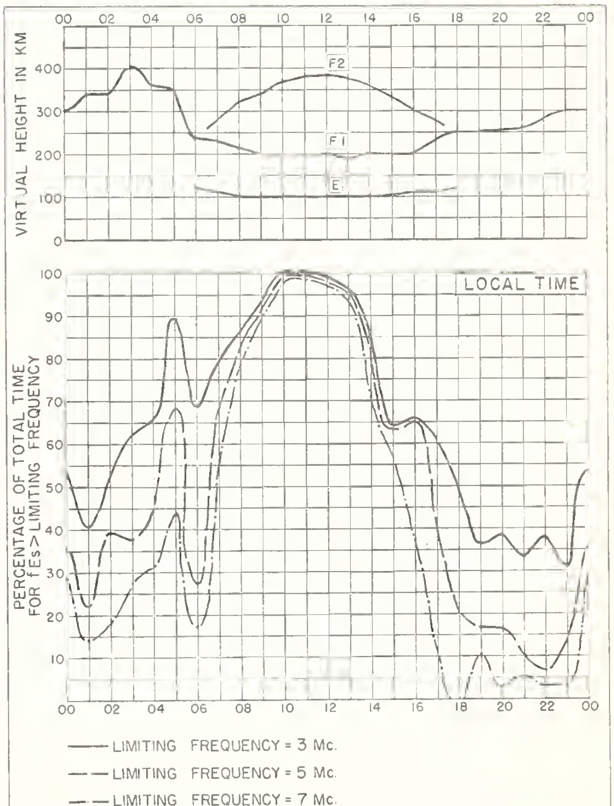


Fig. 32. HUANCAYO, PERU DECEMBER 1953

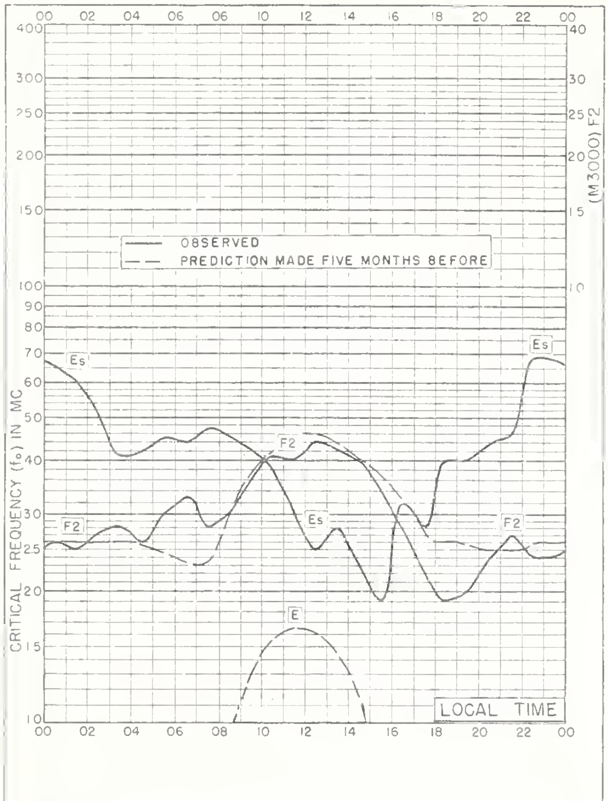


Fig 33. POINT BARROW, ALASKA
71.3° N, 156.8° W NOVEMBER 1953

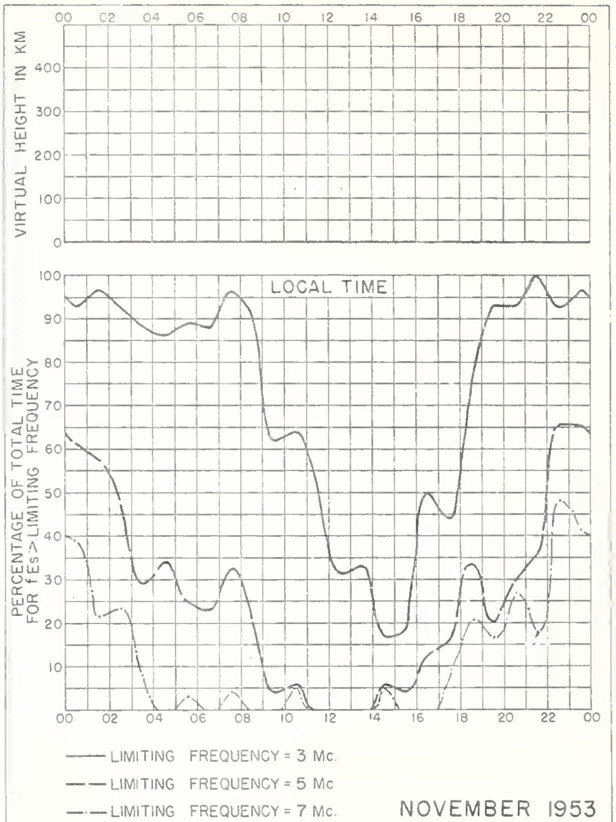


Fig. 34. POINT BARROW, ALASKA

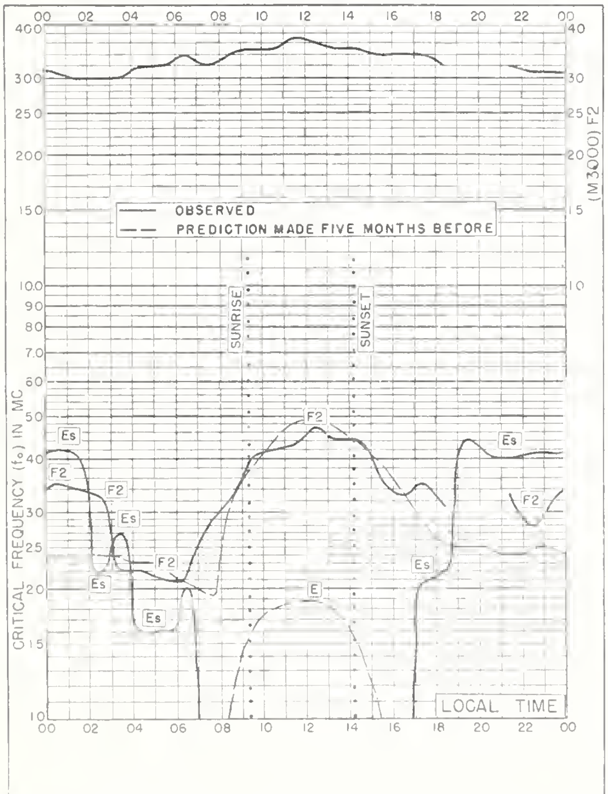


Fig 35. KIRUNA, SWEDEN
67.8°N, 20.5°E NOVEMBER 1953

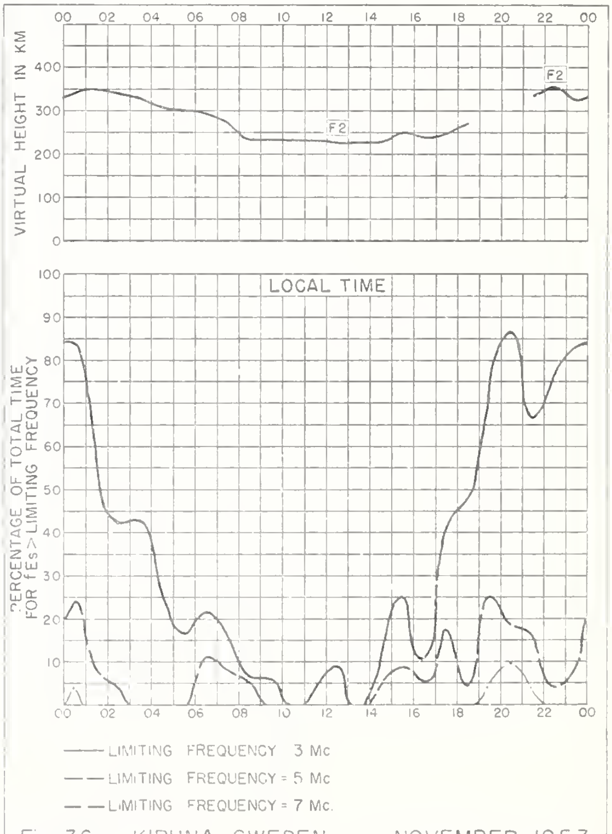


Fig. 36. KIRUNA, SWEDEN NOVEMBER 1953

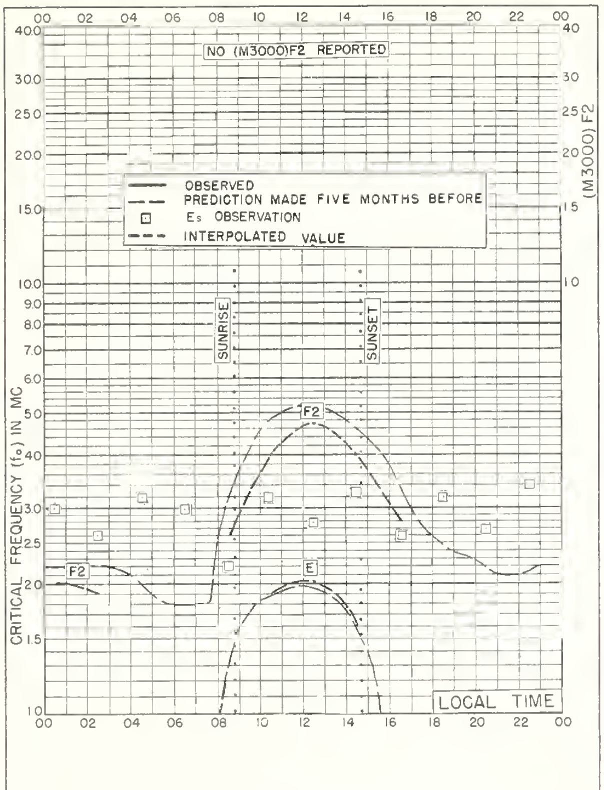


Fig. 37. LULEA, SWEDEN
65.6° N, 22.1° E NOVEMBER 1953

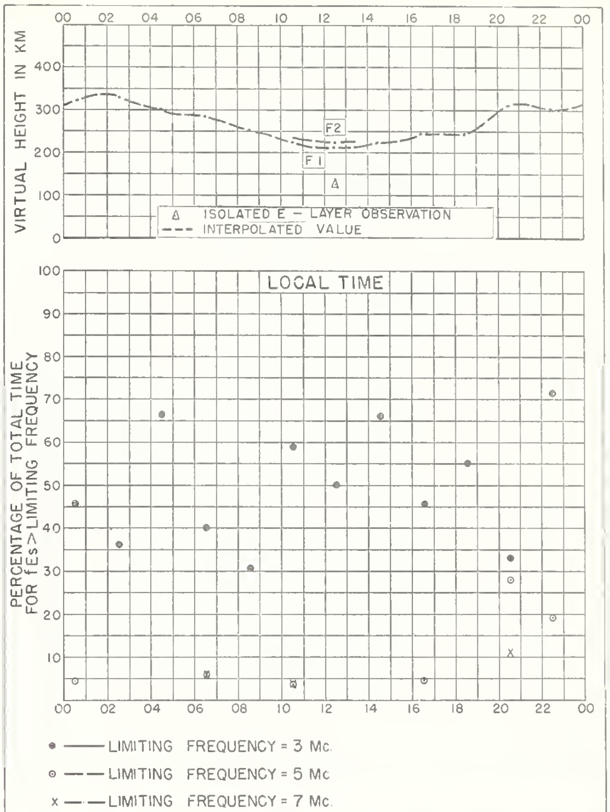


Fig. 38. LULEA, SWEDEN NOVEMBER 1953

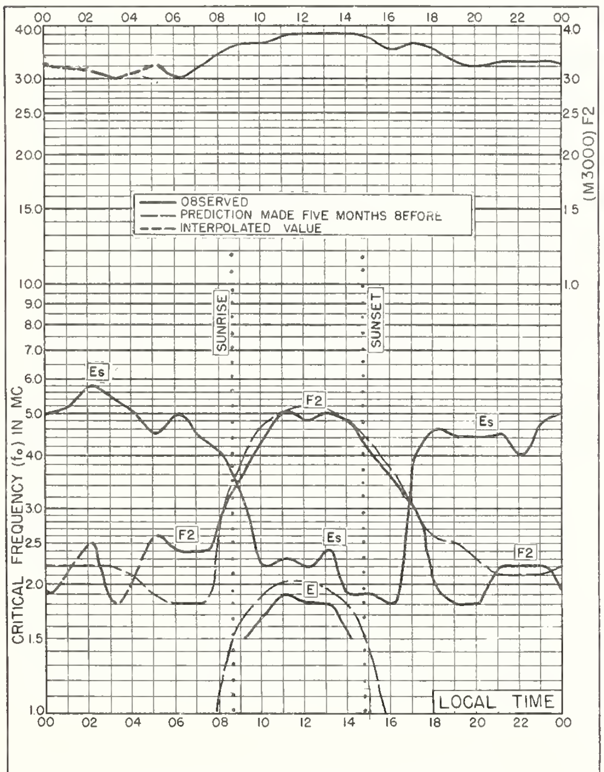


Fig. 39. FAIRBANKS, ALASKA
64.9°N, 147.8°W NOVEMBER 1953

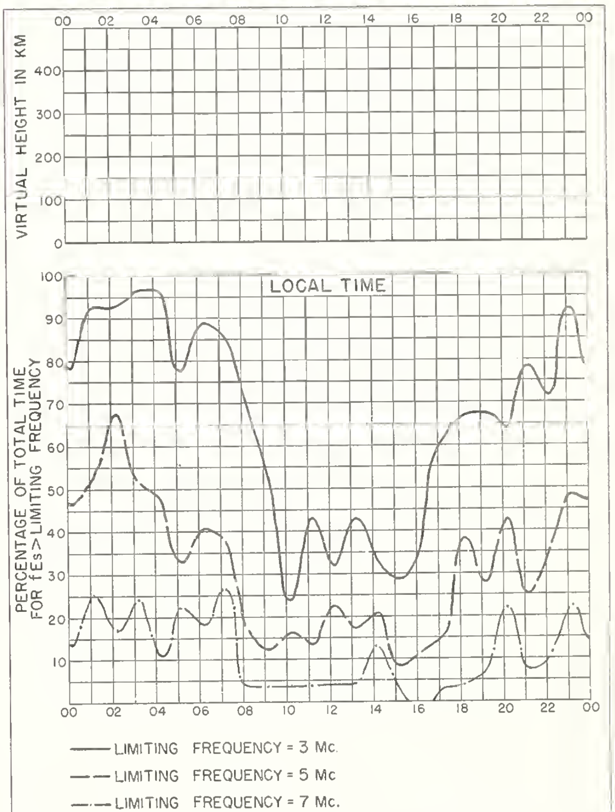


Fig. 40. FAIRBANKS, ALASKA NOVEMBER 1953

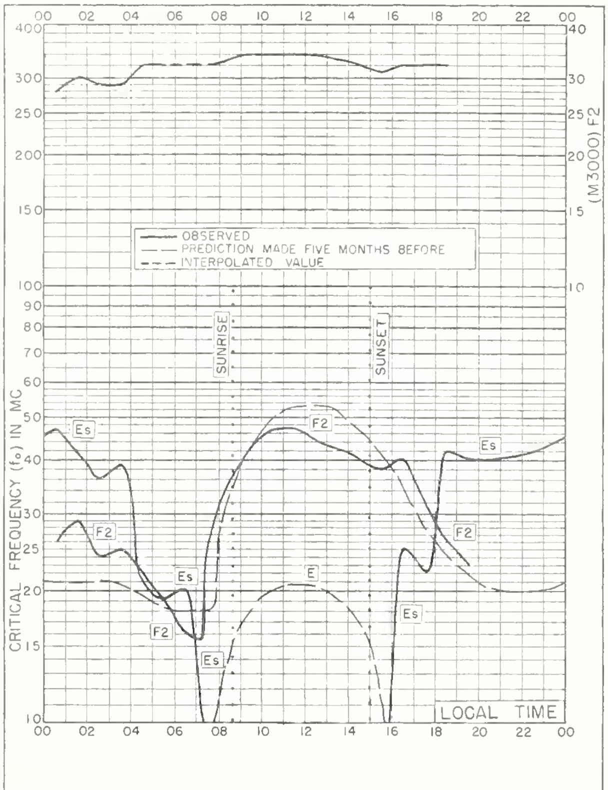


Fig. 41. REYKJAVIK, ICELAND
64.1° N, 21.8° W NOVEMBER 1953

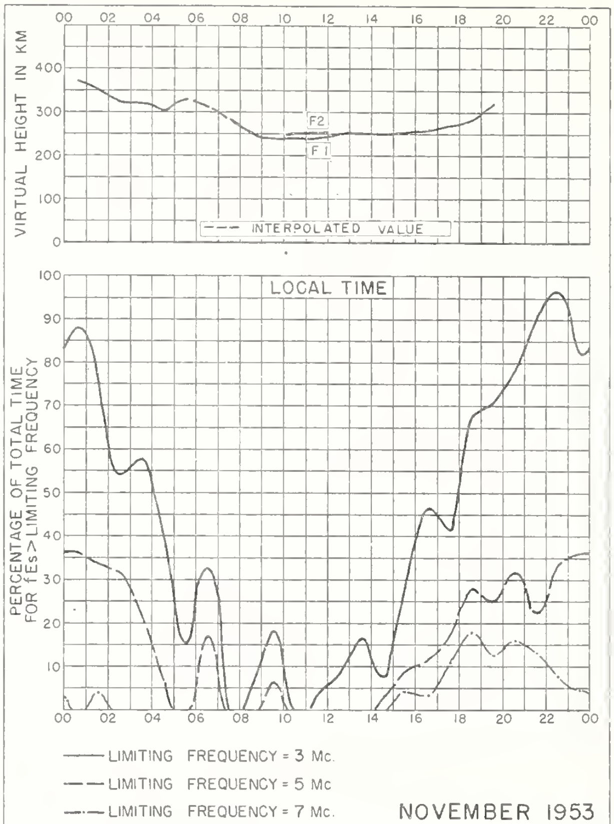


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Fig. 42. REYKJAVIK, ICELAND

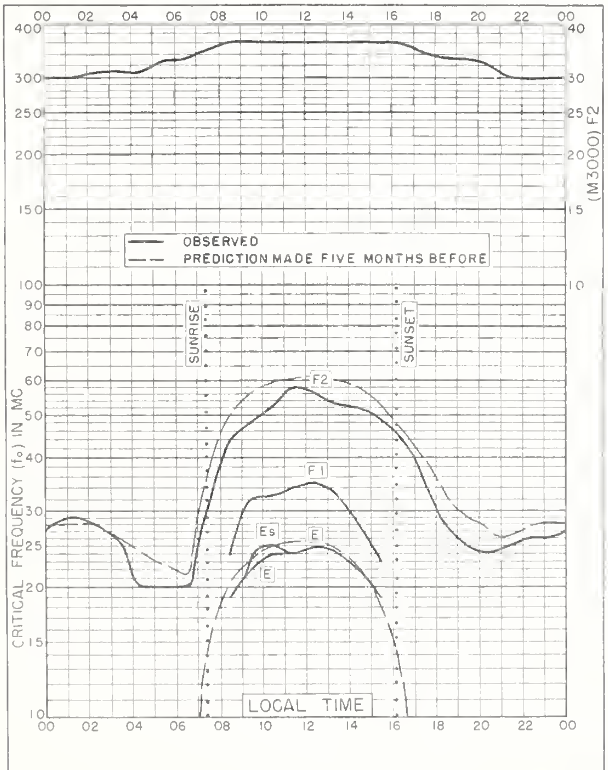
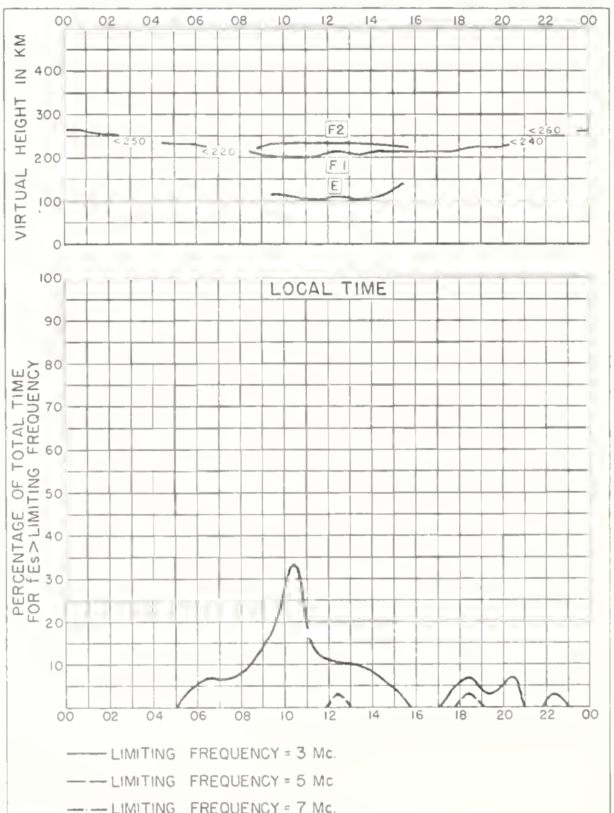


Fig. 43. DE BILT, HOLLAND
52.1° N 5.2° E NOVEMBER 1953



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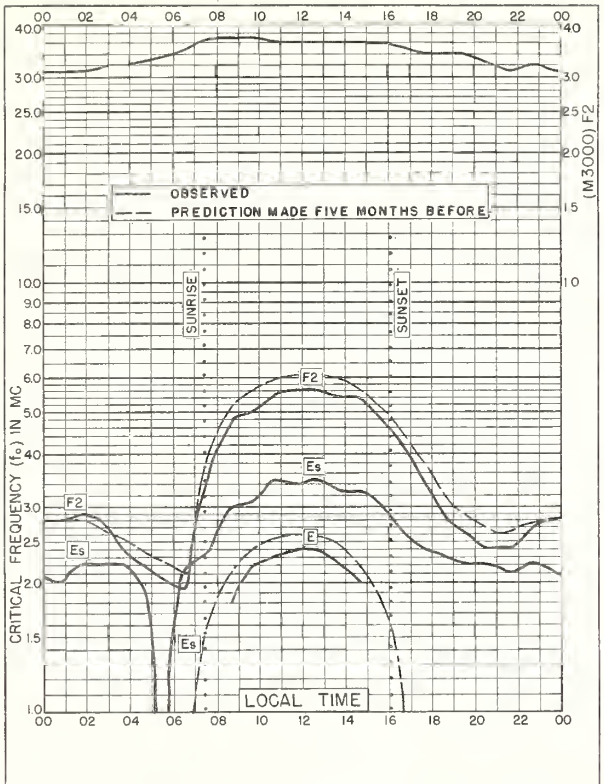

Fig. 45. LINDAU/HARZ, GERMANY
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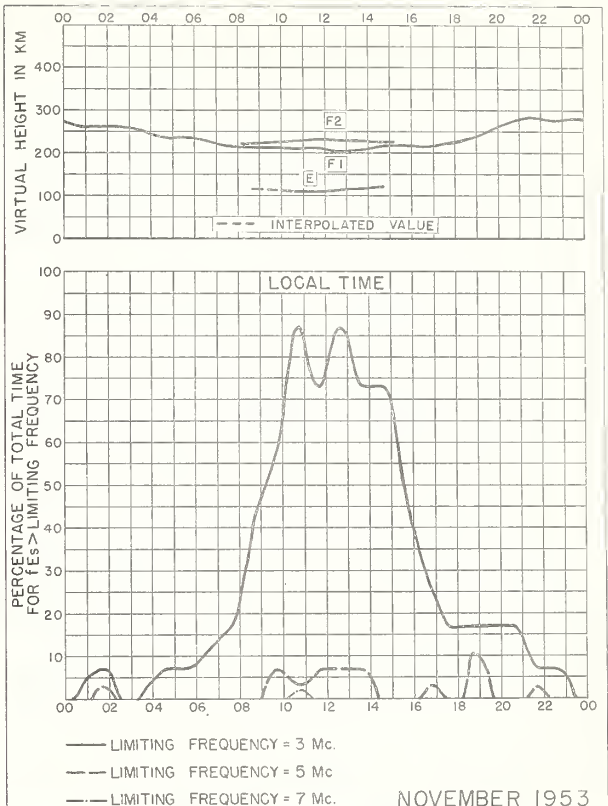

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Fig. 46. LINDAU/HARZ, GERMANY

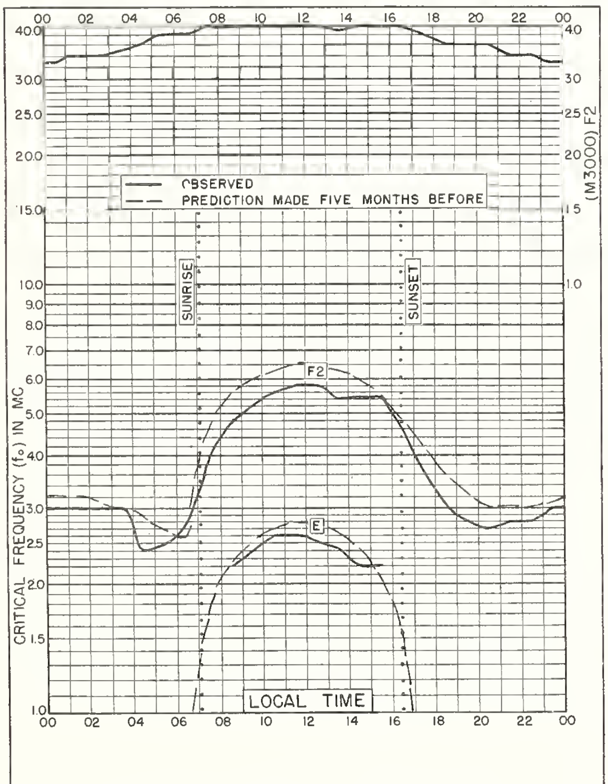

Fig. 47. SCHWARZENBURG, SWITZERLAND
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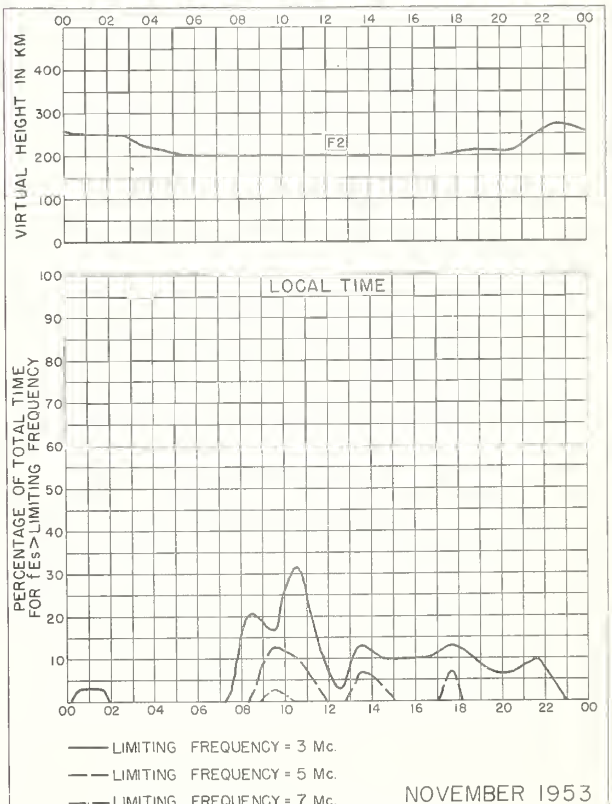

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Fig. 48. SCHWARZENBURG, SWITZERLAND

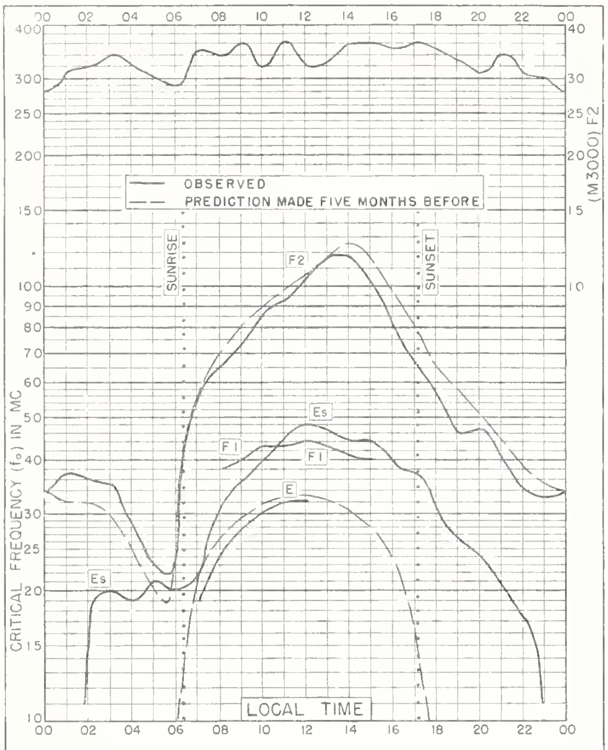

Fig.49. FORMOSA, CHINA
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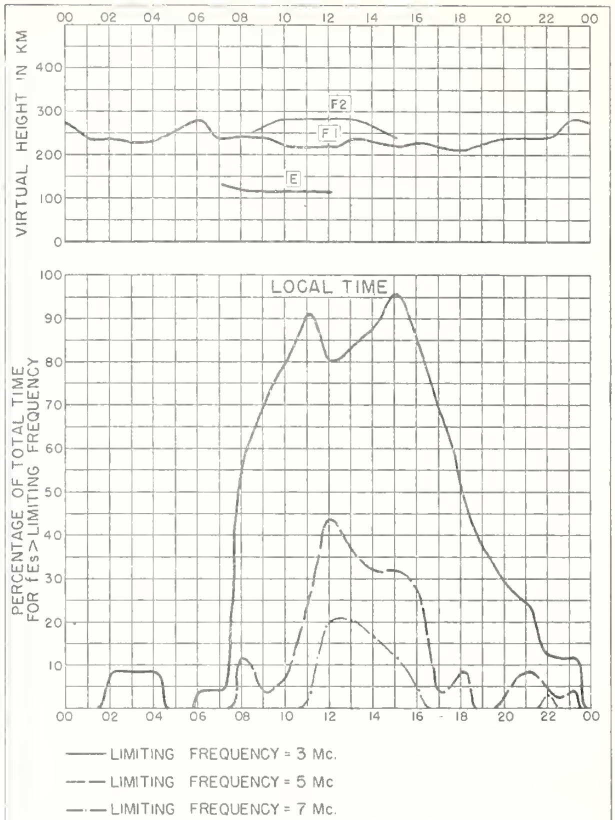

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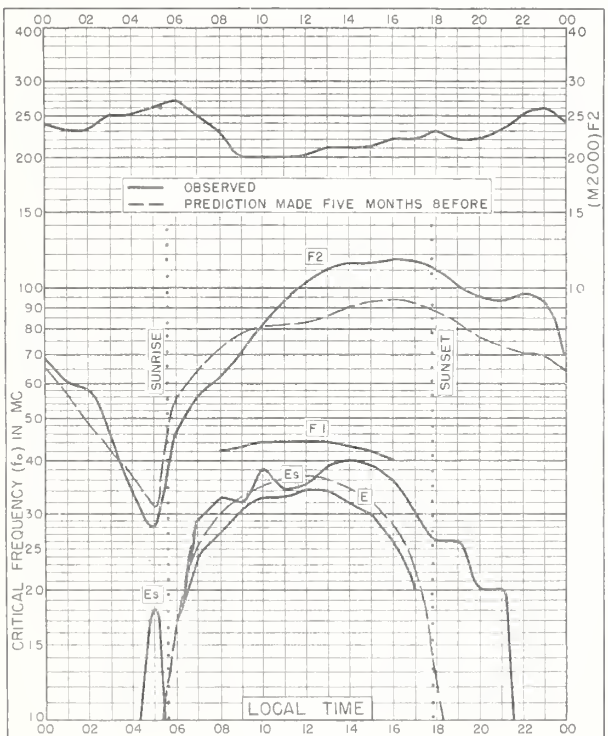

Fig.51. LEOPOLDVILLE, BELGIAN CONGO
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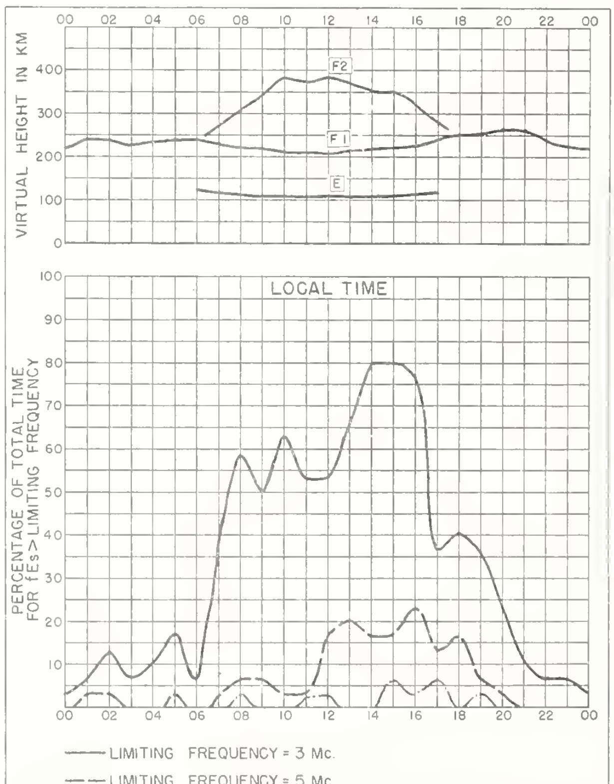
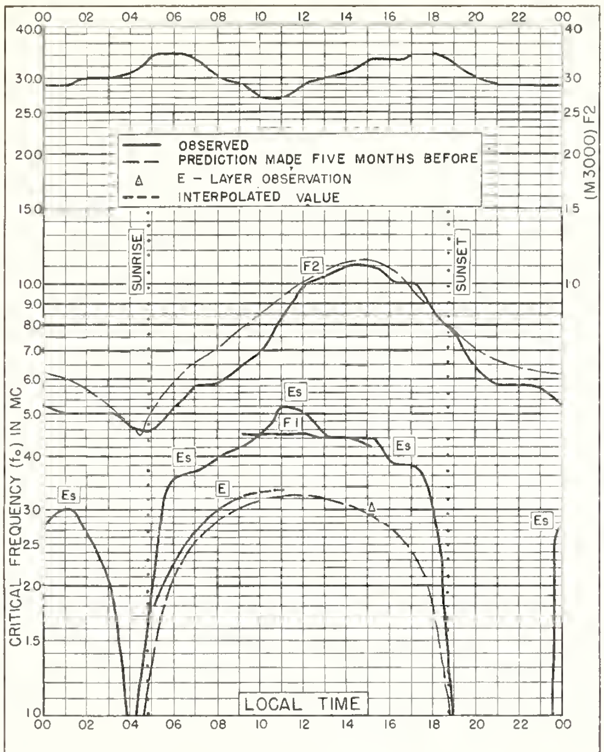


NOVEMBER 1953
Fig. 52. LEOPOLDVILLE, BELGIAN CONGO



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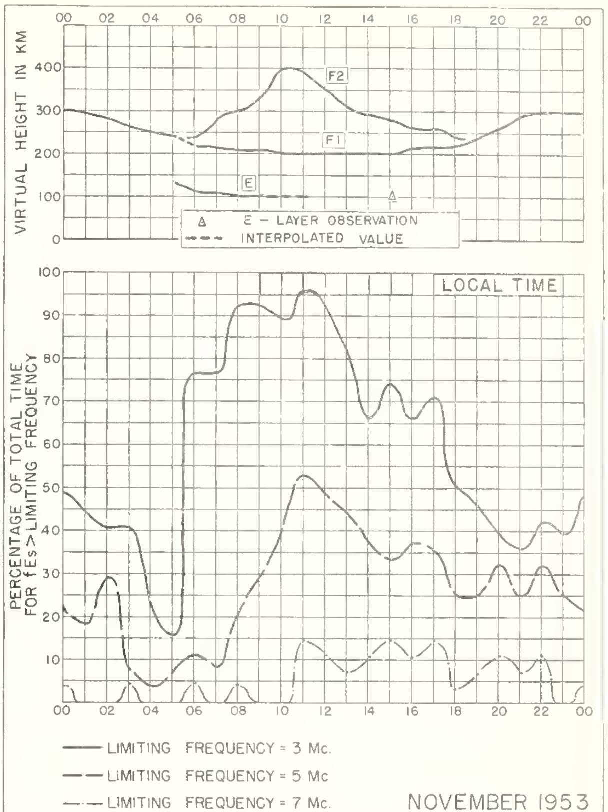

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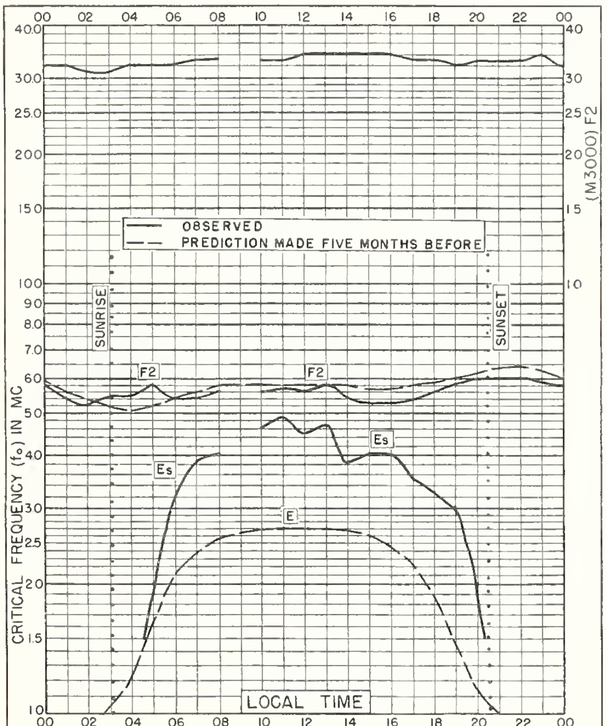

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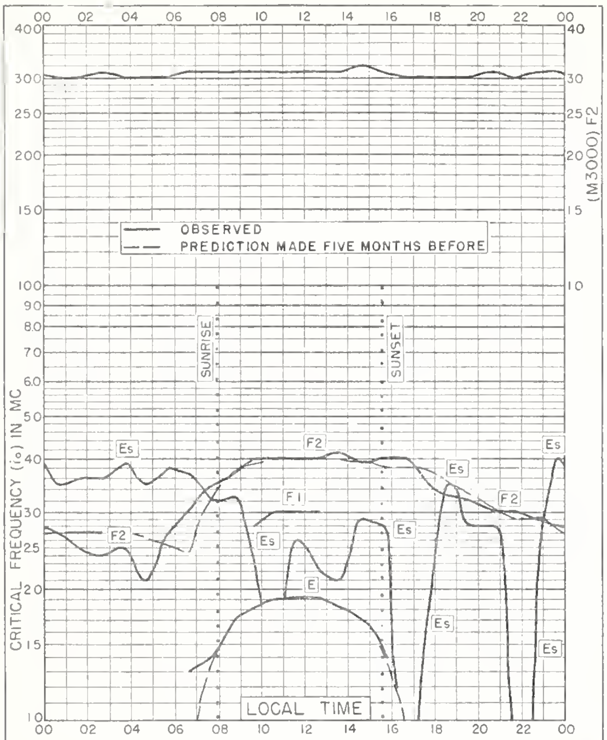
Fig. 56. DECEPCION I. NOVEMBER 1953



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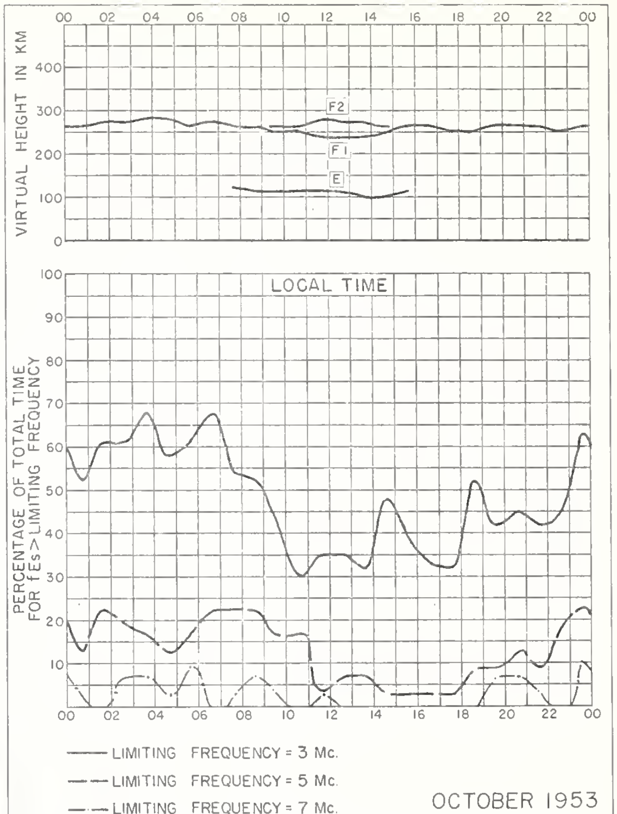

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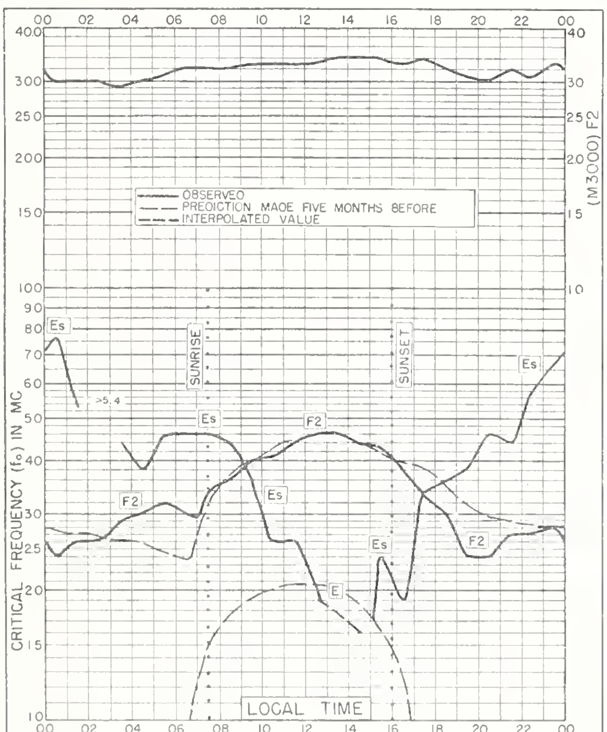
Fig 58. RESOLUTE BAY, CANADA



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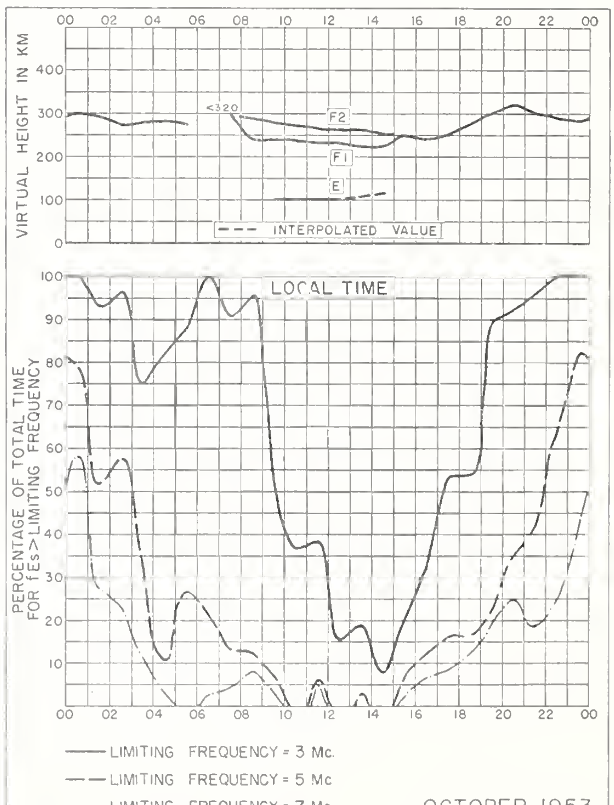

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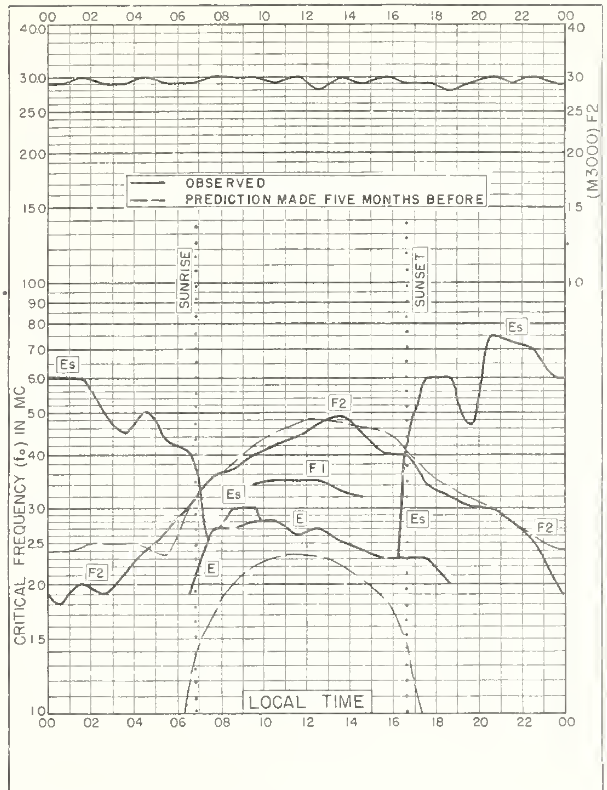

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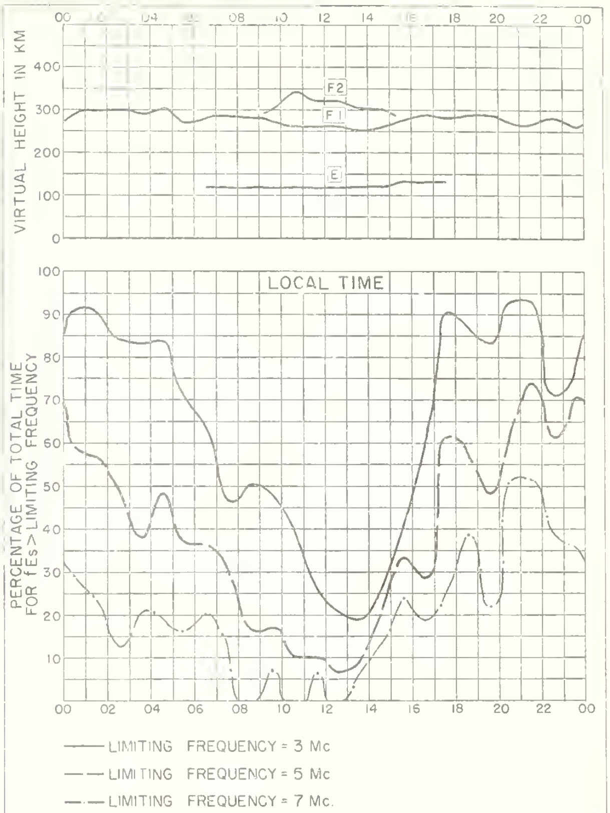

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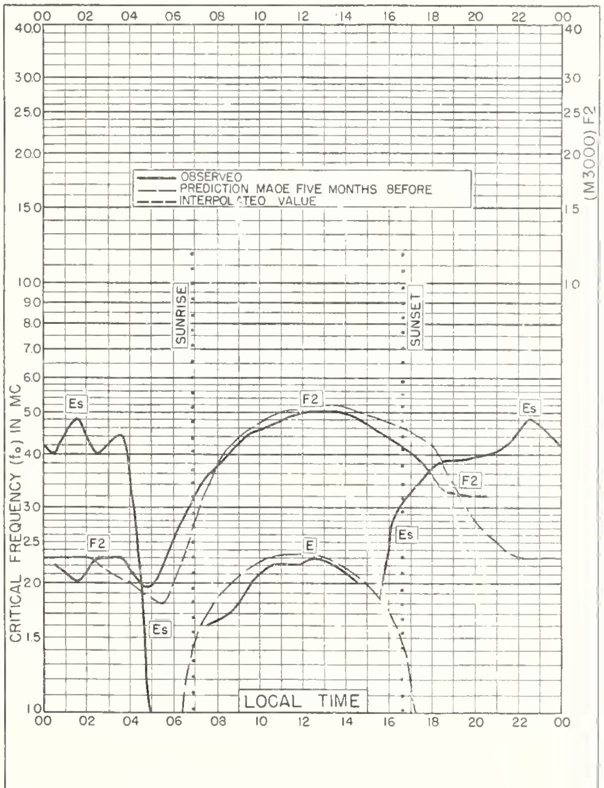

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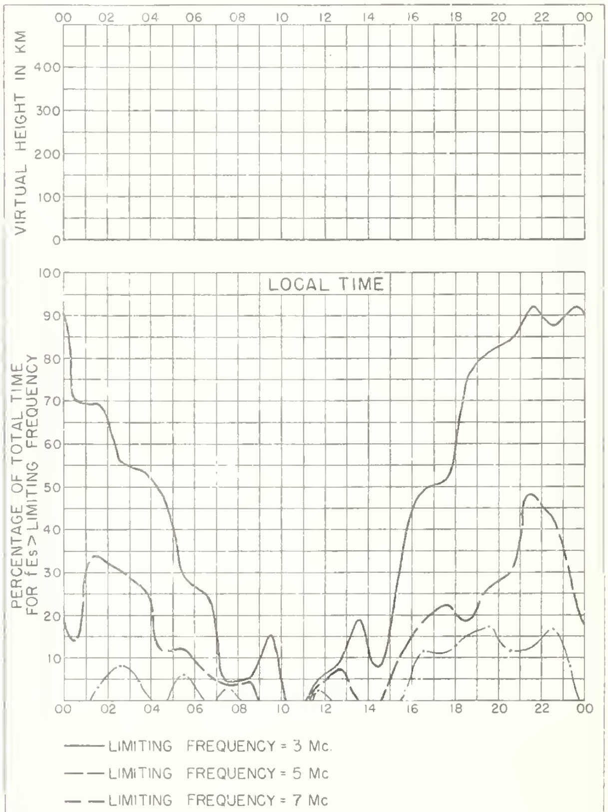

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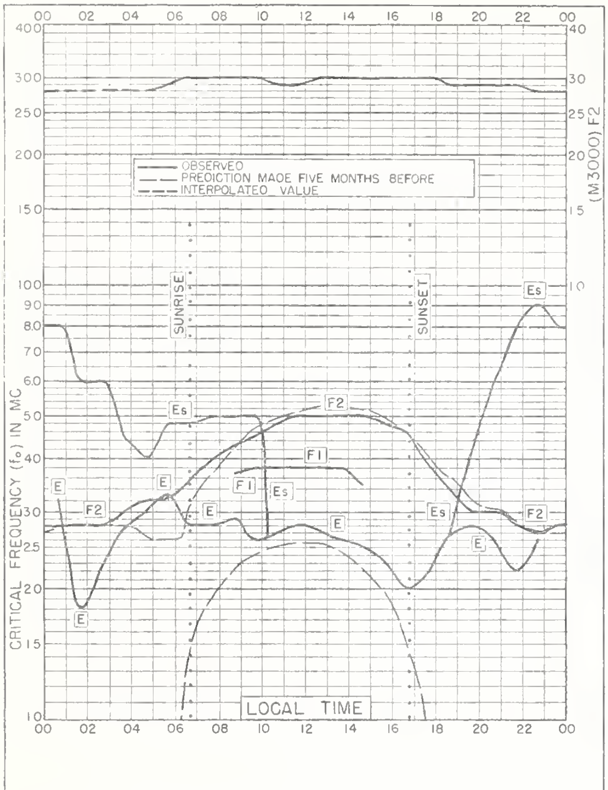

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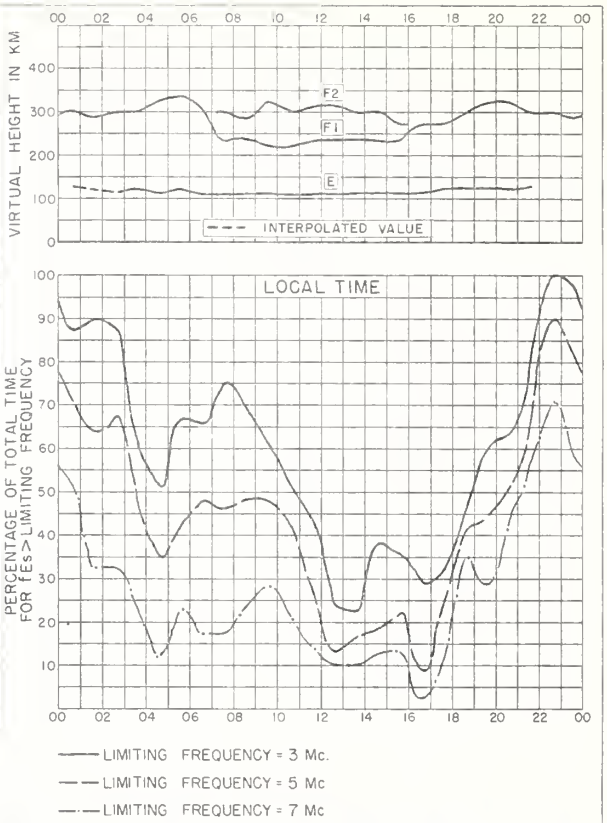

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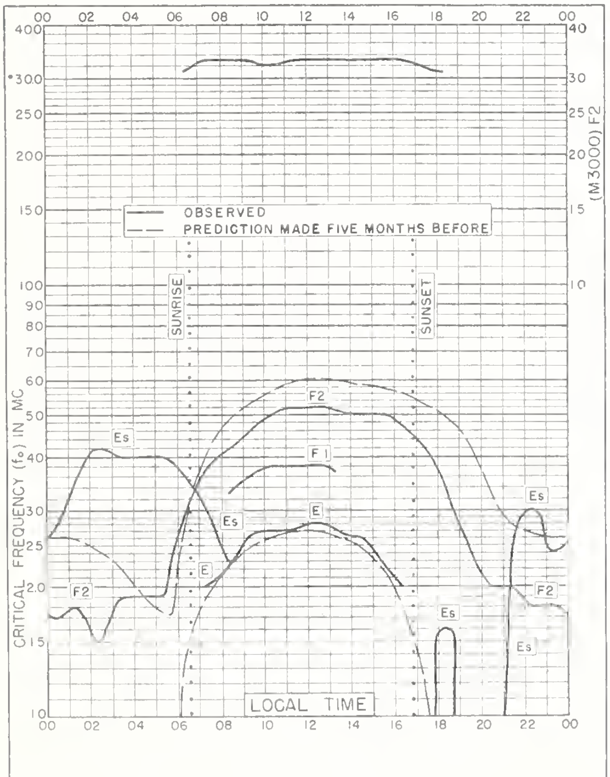

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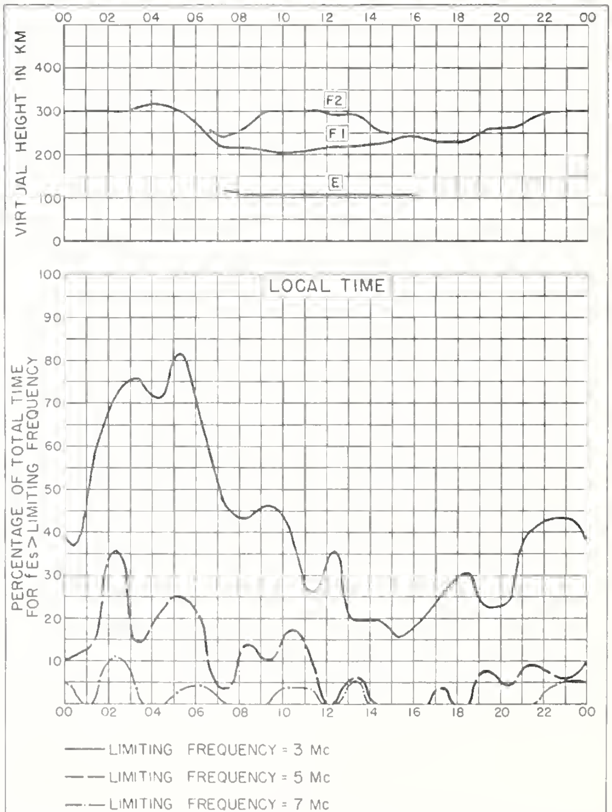

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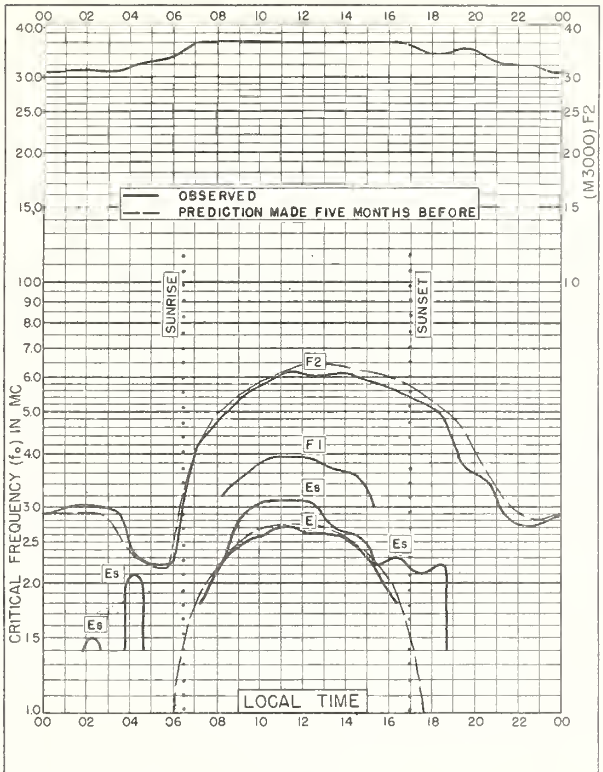

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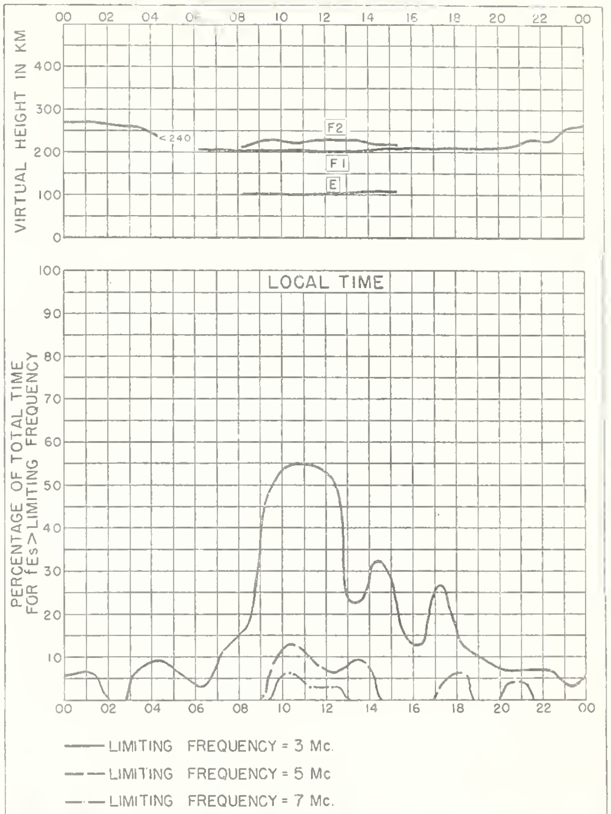

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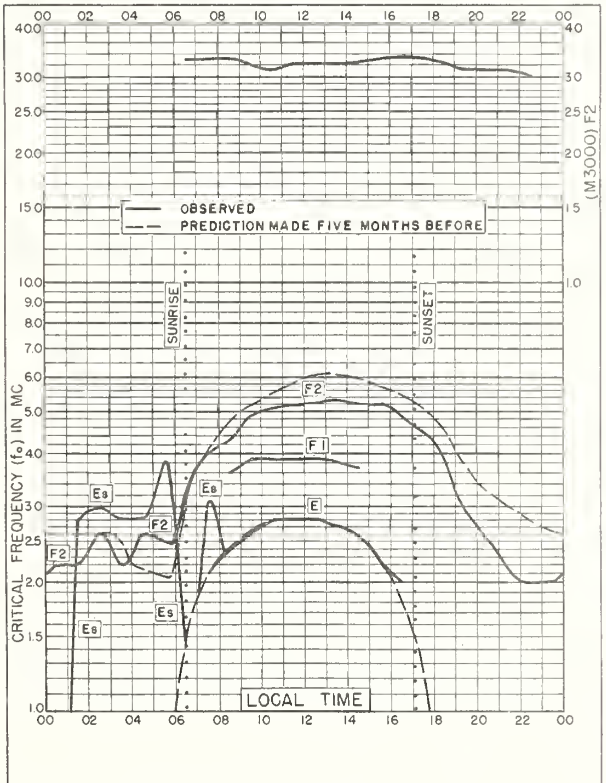

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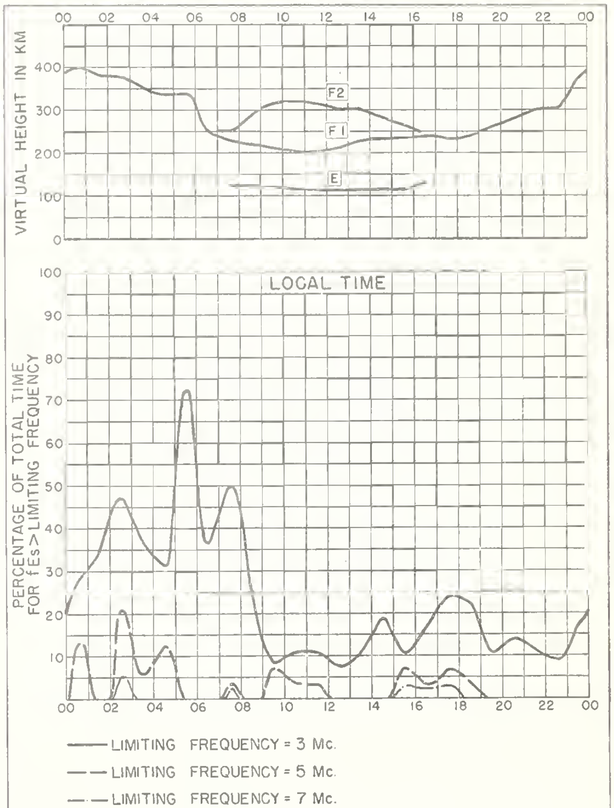

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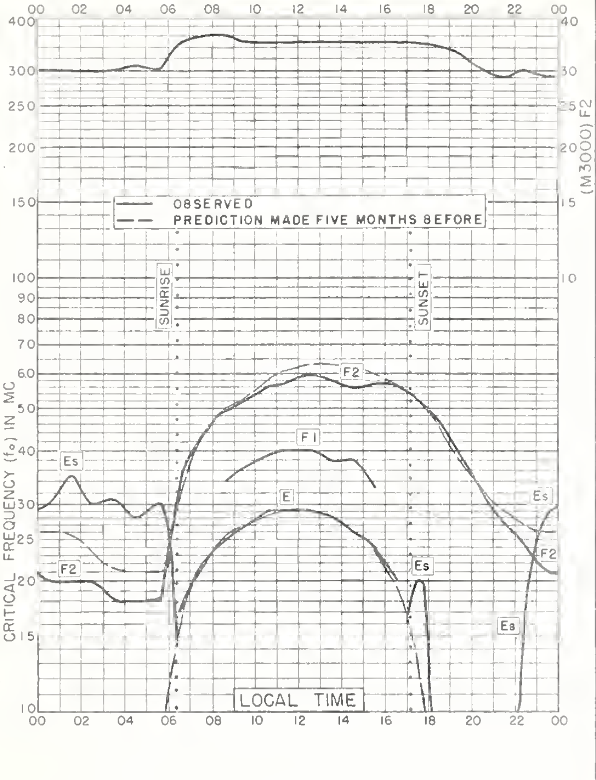

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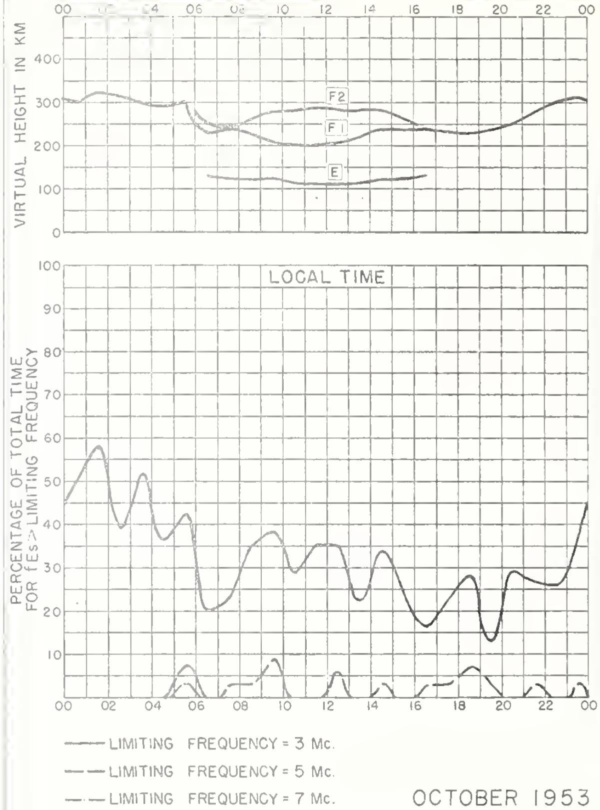

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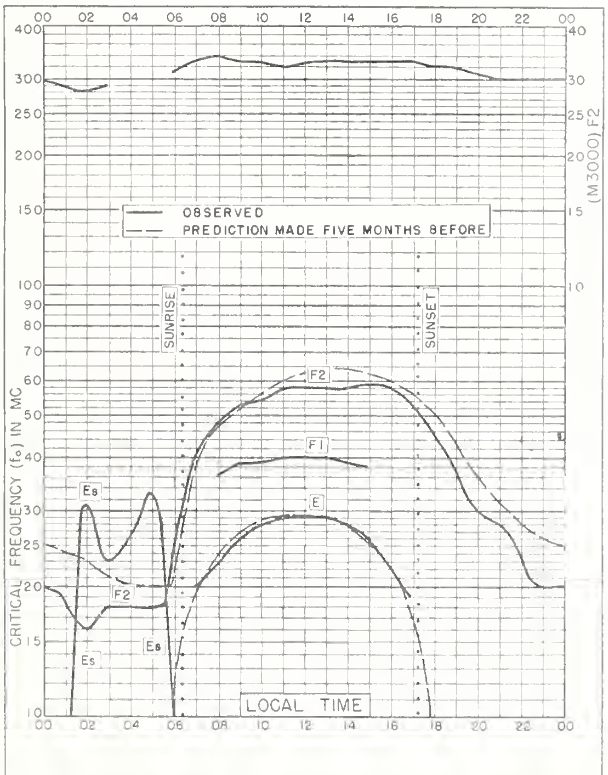

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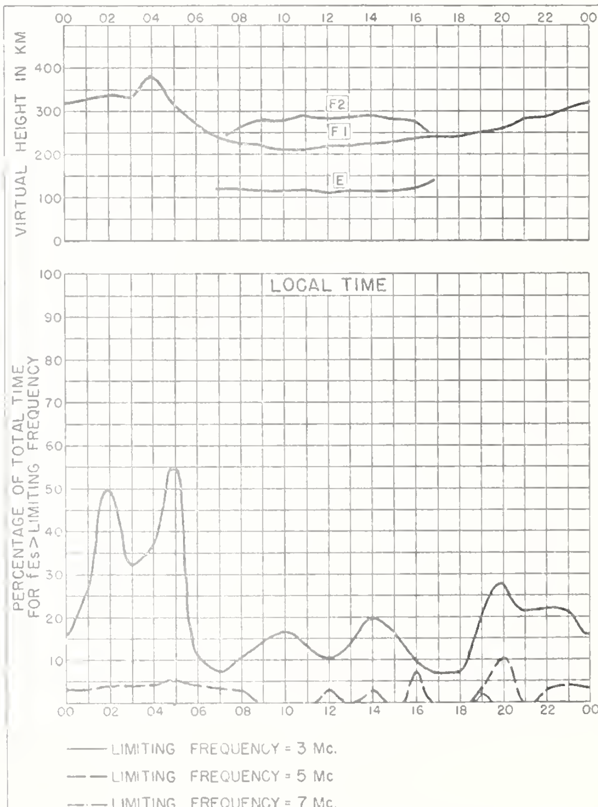

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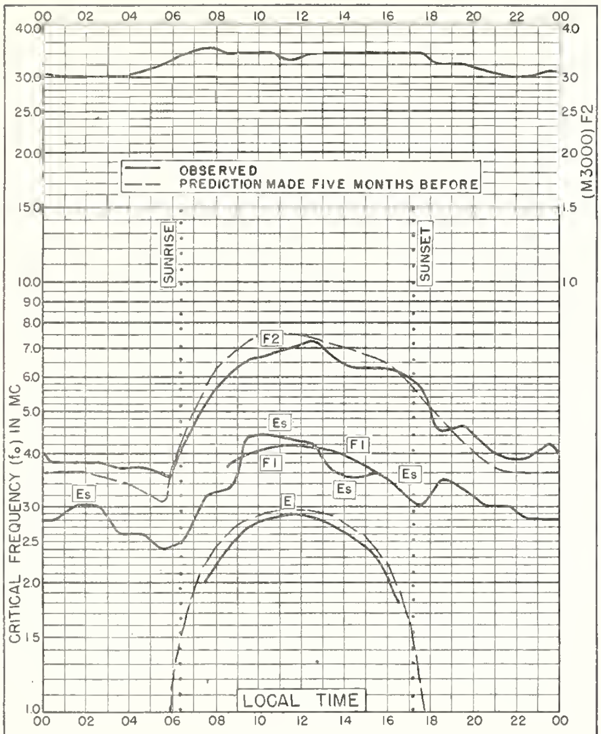

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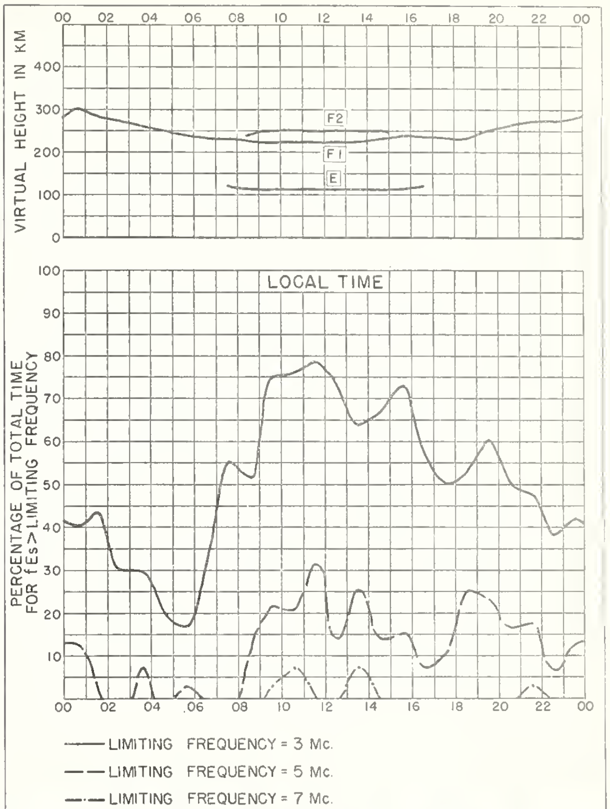

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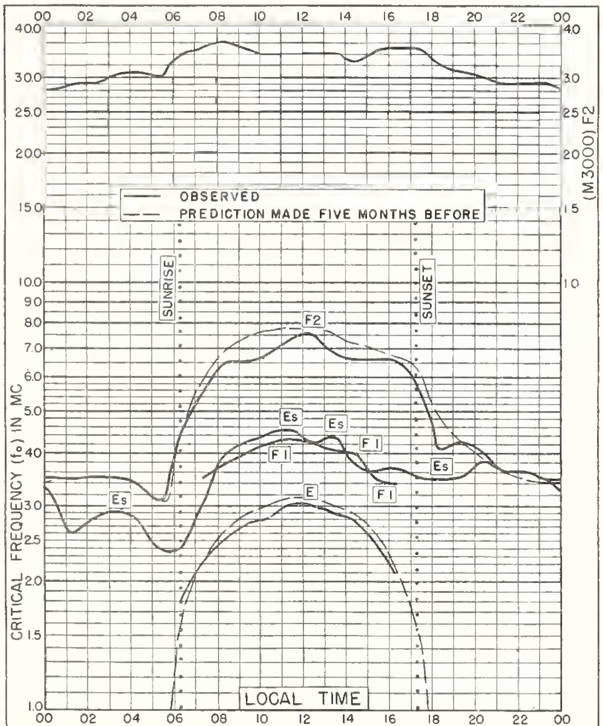

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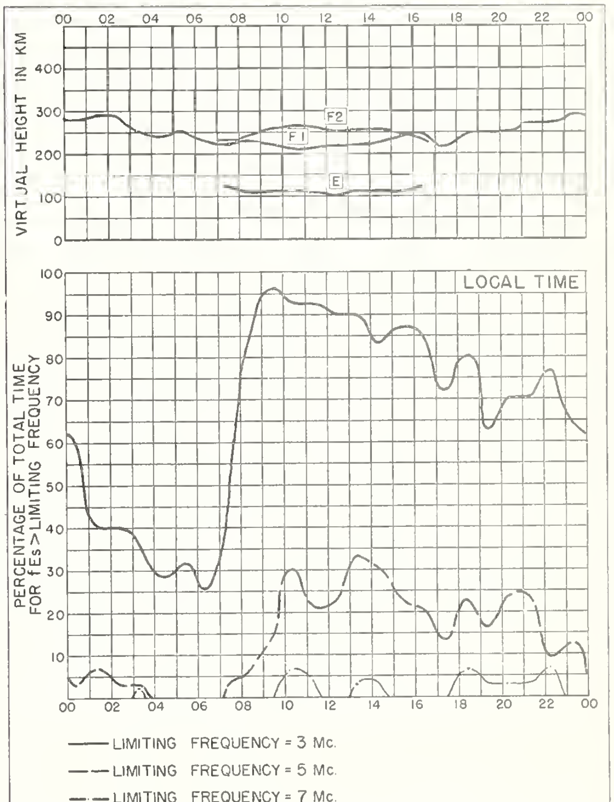

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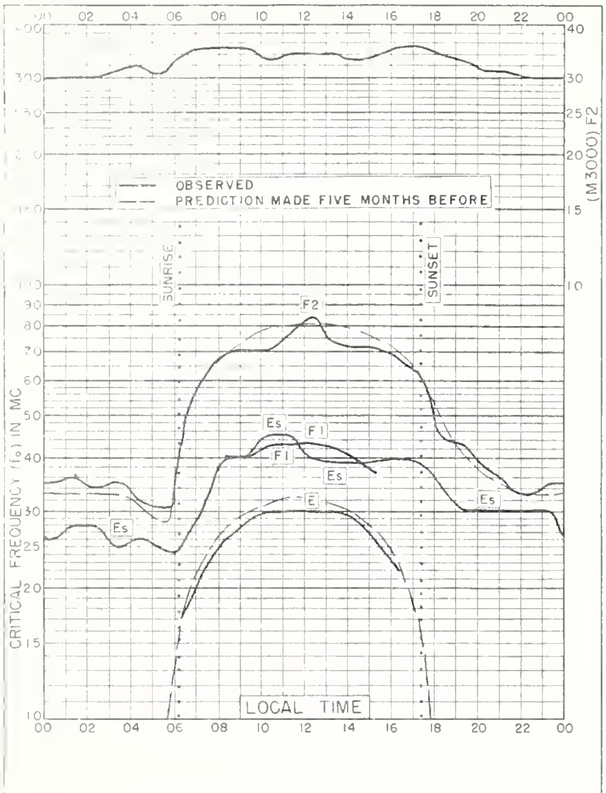

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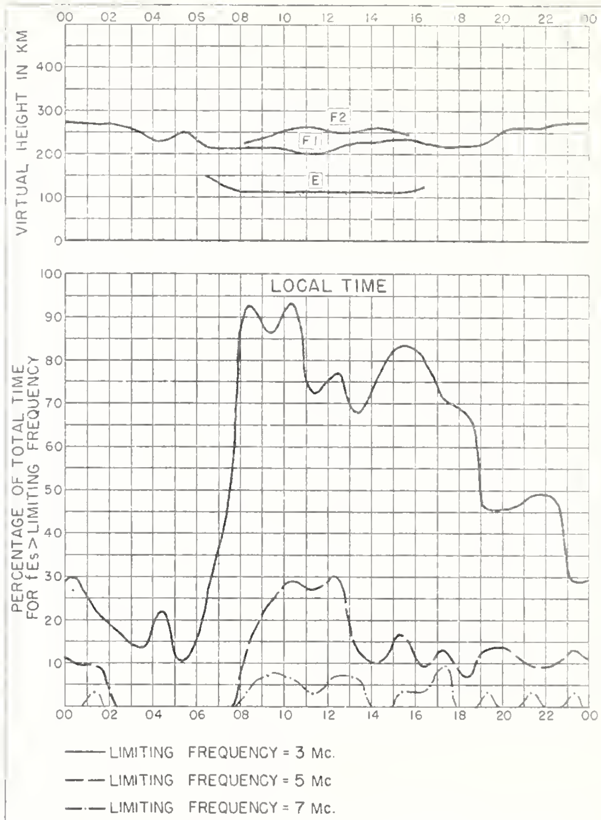

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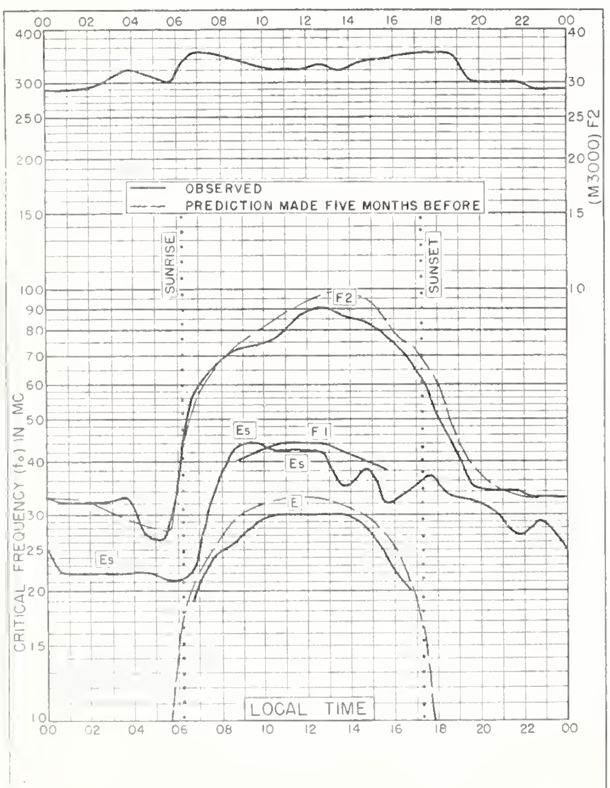

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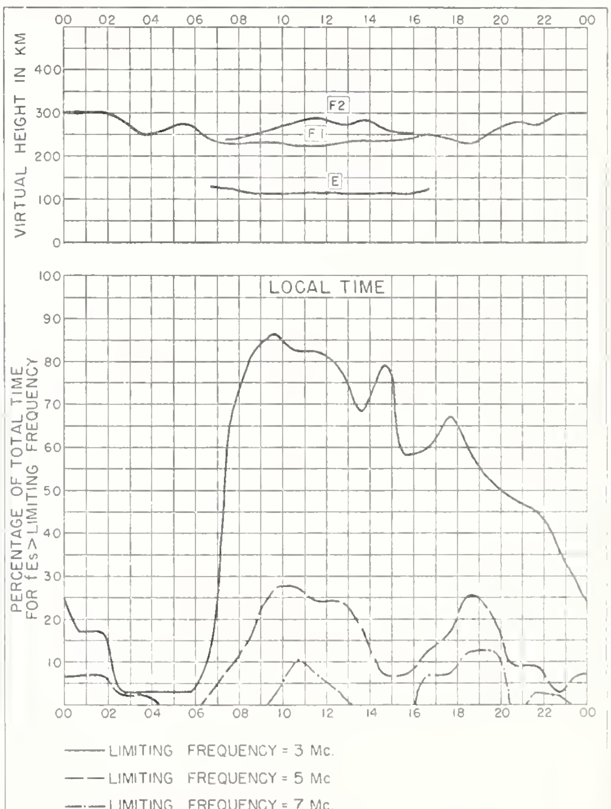

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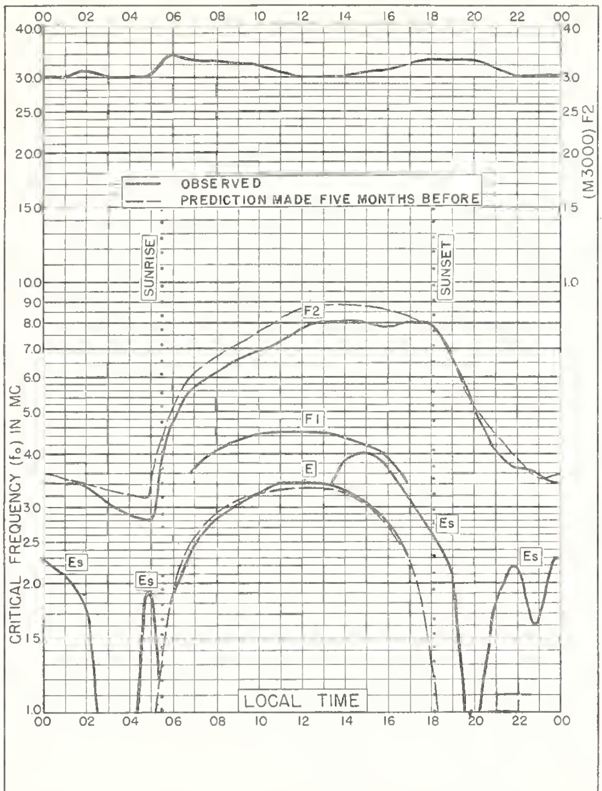

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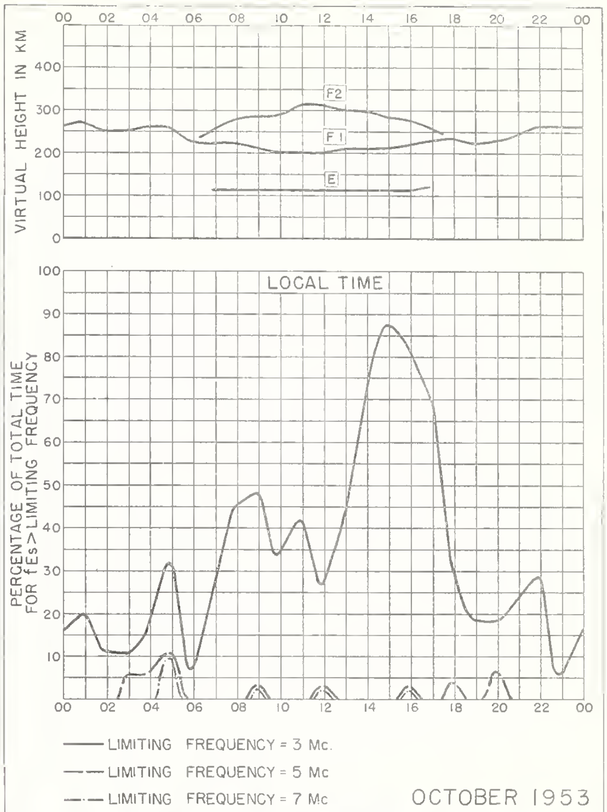

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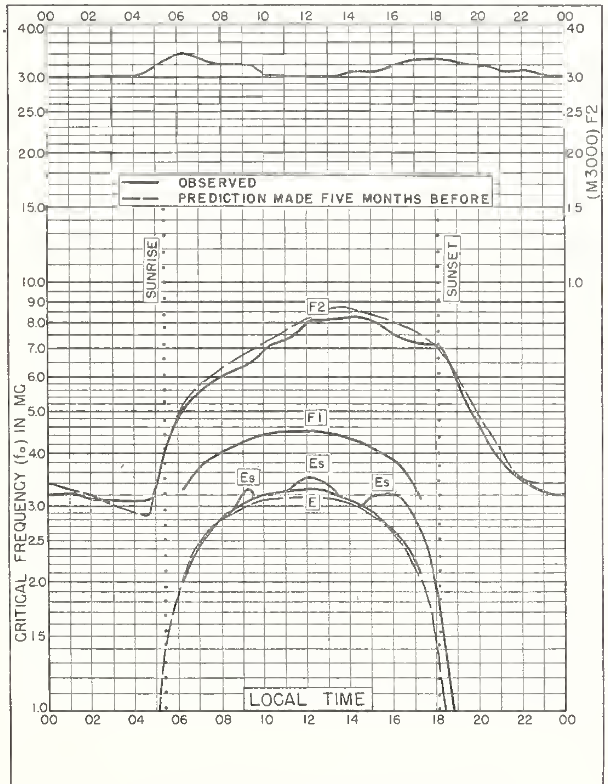

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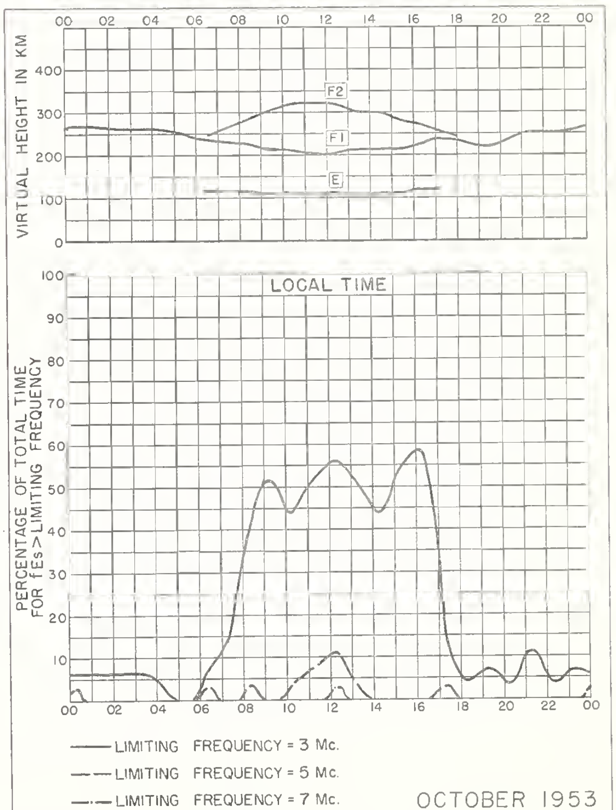

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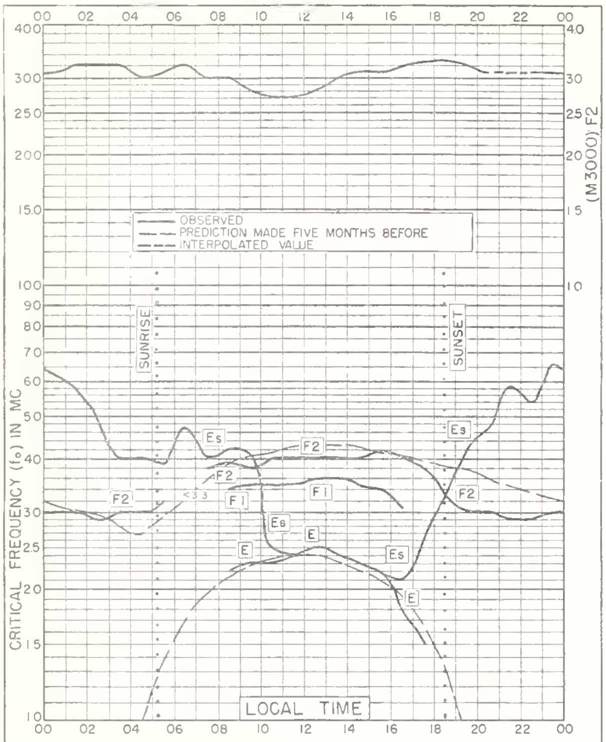

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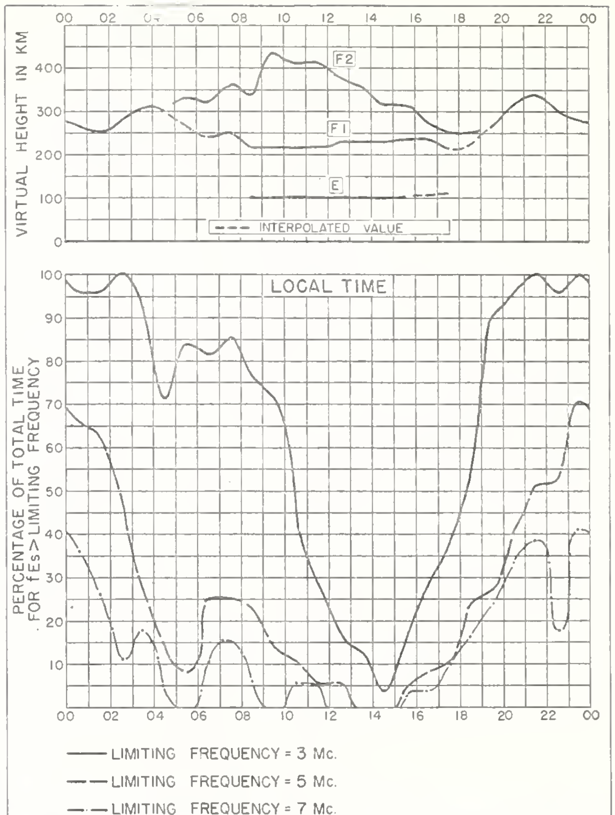

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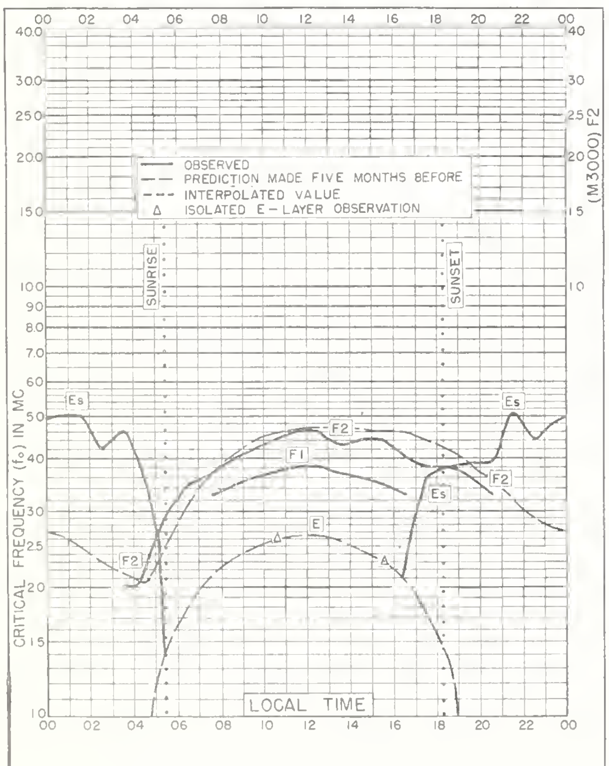

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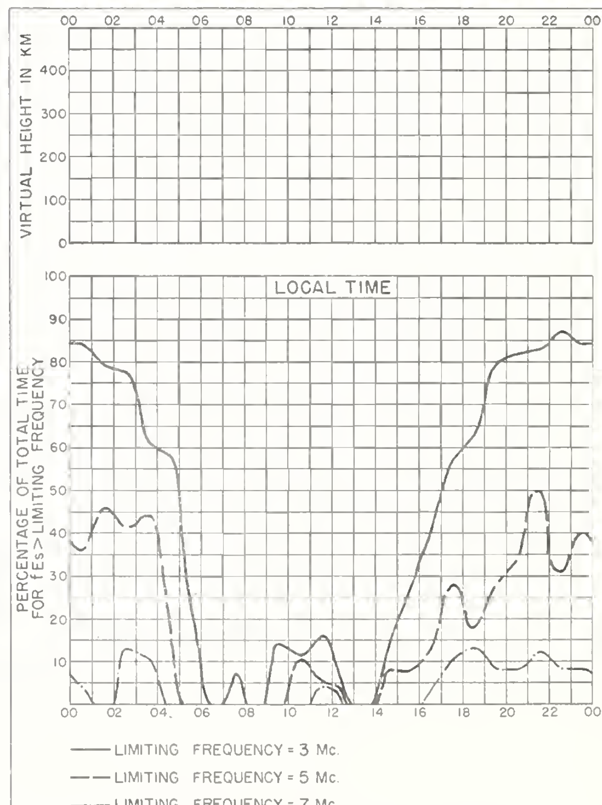

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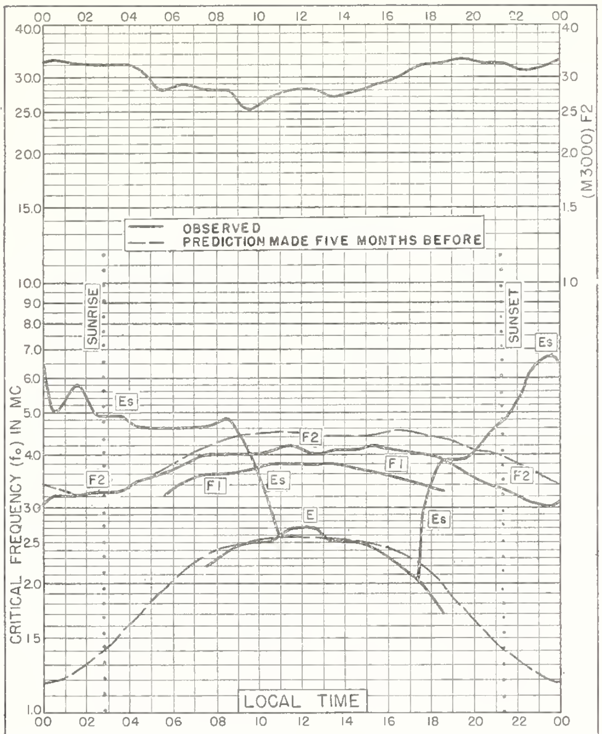

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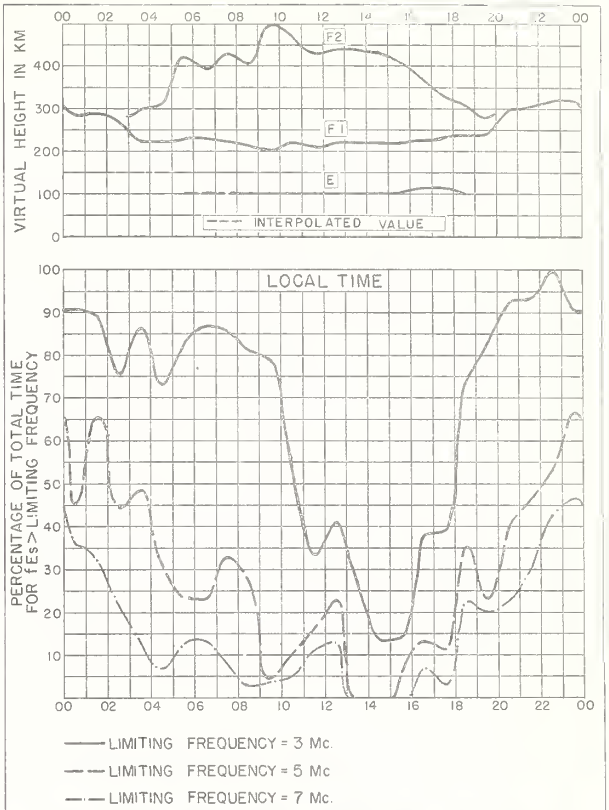

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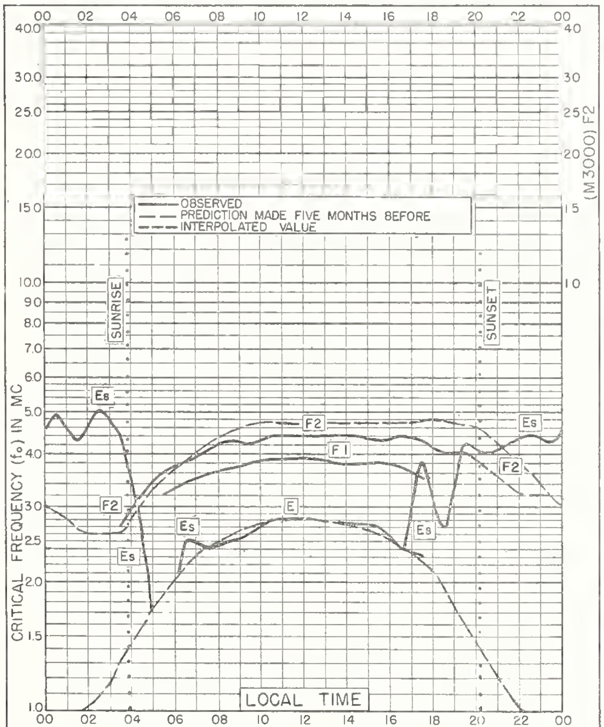

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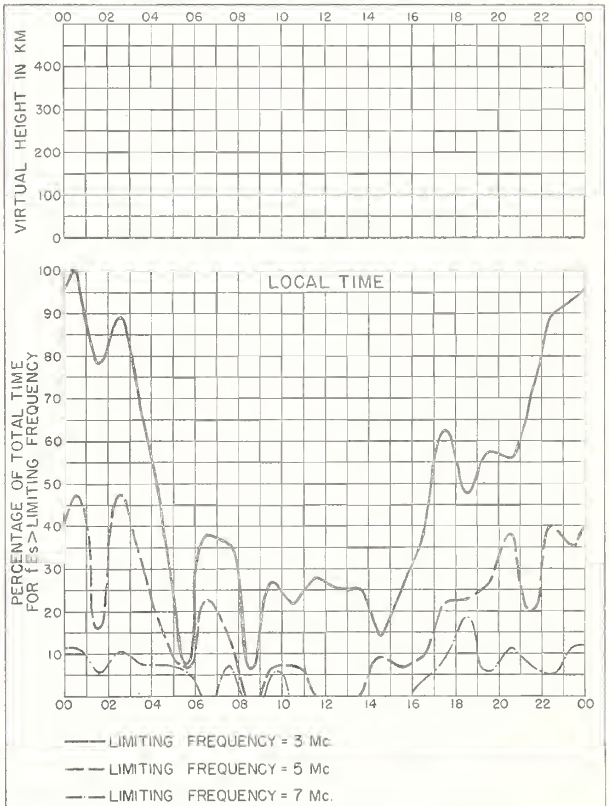

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CRPL and IRPL Reports

[A list of CRPL Section Reports is available from the Central Radio Propagation Laboratory upon request]

Daily:

Radio disturbance forecasts, every half hour from broadcast station WWV of the National Bureau of Standards.
Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Semiweekly:

CRPL—J. North Atlantic Radio Propagation Forecast (of days most likely to be disturbed during following month).
CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11-499-, monthly supplements to TM 11-499; Dept. of the Navy, DNC 13 ( ) series; Dept. of the Air Force, TO 16-1B-2 series.)
CRPL—F. Ionospheric Data.
*IRPL—A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.
*IRPL—H. Frequency Guide for Operating Personnel.

Circulars of the National Bureau of Standards:

NBS Circular 462. Ionospheric Radio Propagation.
NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

Reports issued in past:

IRPL—C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.
IRPL—G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.
(G1, G3, available. Others out of print; see second footnote.)
IRPL—R. Nonscheduled reports:
R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies.
R5. Criteria for Ionospheric Storminess.
**R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.
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**R11. A Nomographic Method for both Prediction and Observation Correlation of Ionosphere Characteristics.
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**R15. Predicted Limits for F2-Layer Radio Transmission Throughout the Solar Cycle.
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**R21. Notes on the Preparation of Skip-Distance and MUF Charts for Use by Direction-Finder Stations. (For distances out to 4000 km.)
**R23. Solar-Cycle Data for Correlation with Radio Propagation Phenomena.
**R24. Relations Between Band Width, Pulse Shape and Usefulness of Pulses in the Loran System.
**R25. The Prediction of Solar Activity as a Basis for the Prediction of Radio Propagation Phenomena.
**R26. The Ionosphere as a Measure of Solar Activity.
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